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ABSTRACT

Problems associated with state support for community colleges are discussed with particular emphasis on situations where local college districts are responsible for providing a portion of total institutional revenue. Three of these problems, relating to the equity and efficiency of how state aid is distributed, are: (1) the integration of direct state support for community colleges into a system of state support for other public education facilities; (2) the consideration of local district wealth; and (3) tuition, including its relationship to the other problems and its impact on students. Technical problems, such as how to measure district wealth, are discussed, and current systems of state support are described. The latter portion of the document examines the community college finance systems in Mississippi, New Jersey, California, and Illinois, especially as they relate to the problem of inter-district equity. District wealth varied substantially between community college districts and variations in total revenues were related, in some cases strongly, to variations in wealth. Tuition levels were also related to wealth, although the direction of the relationship was not uniform among the states examined. One question requiring additional research is how districts would respond to changes in state support designed to "ex ante" eliminate wealth differences. A bibliography is appended. (Author/MB)

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Issues in Financing Community Colleges

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Introduction

In the fall of 1976, over 8.3 million full-time-equivalent (FTE)[1] students were enrolled in colleges or universities in the United States. Of those FTE students, nearly 2.4 million, or 28 percent, were attending public community colleges[2] (Eldridge, 1977). Like other collegiate institutions, community colleges obtain revenues from numerous sources, including governmental appropriations and student tuition. Unlike other collegiate institutions, community colleges in some states derive some of their support from funds appropriated by local community college districts. In 1975, community colleges in 20 states received over 10 percent of their total revenues, excluding those derived from the sales and services of auxiliary enterprises, from local community college districts (Mertins and Brandt, 1977). The community colleges in those 20 states enrolled 1.7 million FTE students, nearly 74 percent of all community college students or over 21 percent of all FTE students enrolled in collegiate institutions.

In states where local community college districts provide any support to the community colleges under their control, the trend has been for the amount of such support to have increased over the past few years as a proportion of all revenues received by those institutions. This has occurred in part because appropriations from state governments have not risen as rapidly as the increase in the current operating expenditures of institutions and in part because states and institutions have been reluctant to raise tuition levels in light of the mission of the community colleges, to provide an academic and economic "open door" of entrance into the institutions.[3] The increased reliance

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[1]In determining the number of FTE students, full-time students have been counted as 1.00 FTE and part-time students have been counted as .33 FTE.

[2]Public community colleges include all two year institutions sponsored in part by appropriations from some level of government. Community colleges, as referred to in the remainder of the paper, are those institutions offering no more than a two year course of study and governed within a community college district. Privately sponsored junior colleges and branches of four year institutions offering only a two year course of study are not included.

[3]The "open door," a description used by Burton Clark in 1960 and by the Carnegie Commission on Higher Education in 1970, refers to a policy under which barriers to attendance are alleviated for students through the minimization of entrance requirements and cost and the optimization of the conditions under which courses are offered.

for support on local community college districts, and primarily their property tax bases, has raised a number of questions concerning the equity and the viability of current methods of financing community colleges. Since community college districts within a state are likely to differ in the magnitude of their property tax bases, there is also likely to be some variance among community college districts in their ability to generate institutional support. Such a variance may lead to concurrent variances in the expenditure levels of institutions or in the tuition rates of institutions. The equity of a situation in which the expenditure levels, or the tuition rates, of community colleges are related to the wealth of their sponsoring districts can be questioned for many of the same reasons that the relationship between expenditure levels and the wealth of elementary/secondary school districts has been questioned. While the underlying responsibility of states toward community colleges is different from the responsibility of states toward elementary/secondary schools, from a legal and historical perspective, there is little justification for the state to support a financing system that promotes, or permits, the expenditure levels of community colleges to be determined by the wealth of local community college districts.

The purpose of this booklet is to discuss the problems associated with state systems of financing community colleges and to examine the relationships that arise between states, local community college districts and students when each is an important contributor to institutional revenues. The booklet is divided into five sections. In the first section, a review is made of issues related to intergovernmental fiscal policy and the development of state systems for financing community colleges. In the second section, problems related to community college finance are discussed. State systems of financing community colleges are examined in the third section, including a detailed description of the finance systems in Mississippi, New Jersey, California and Illinois. In the fourth section, an empirical analysis of the finance systems in these four states is presented. A summary of issues and findings is contained in the final section of the booklet.

I. Intergovernmental Fiscal Issues and Community College Finance

Community college districts represent some of the thousands of local governments that, along with federal and state governments, compose the federal system. While it is possible, from a theoretical perspective, to assign the provision of social goods to optimally defined governmental units, designed to reflect the preferences of the residents of the region over which the relevant benefits are likely to extend, the historic development of those units has led to the need for intergovernmental fiscal adjustments. Such adjustments, involving the flow of aid from more inclusive higher levels of government to lower-level ones, can be justified on the basis of both factors that are beyond the control of governments and factors within their control, but not controlled, due to political considerations. The principal factors largely beyond the control of governments are regional differences in wealth and interjurisdictional spillovers of the costs and benefits associated with the provision of social goods. Factors within governmental control, but not normally controlled, include voter procedures on taxes and reliance on taxes that tend to have a lower income elasticity than the expenditures they finance (Hirsch, 1970, p. 114).

In addition to the promotion of interjurisdictional fiscal equity, intergovernmental aid may be justified when a higher level of government is interested in increasing the expenditures, or equalizing the expenditures, of lower levels of government, particularly when "merit goods," such as education, are being produced (Musgrave and Musgrave, 1973, p. 612). Oates has noted that in the United States, as in most federal countries, equalization and the achievement of certain national minimum levels of basic services are regarded as essential elements in intergovernmental relations (1972. p. 87).

In order to accomplish these and other objectives, higher levels of government provide grants of different types to lower levels of government. The primary distinction among grants is based on three features: whether the grant has a matching requirement or not, whether the grant is distributed for general purposes or is categorical in nature and whether the magnitude of the grant is related to or independent of the fiscal capacity of the receiving jurisdiction. The

promotion of fiscal equity and appropriate expenditure levels normally requires that grants have a matching component, that they be categorical and that they be distributed in a manner that takes into consideration the differing fiscal capacities of governments (Musgrave and Musgrave, 1973, p. 614).

In 1975, the federal government distributed $49.6 billion to state and local governments for the purpose of providing education, highways, public welfare, health and hospitals, housing and urban renewal, and other activities sponsored by those governments. Of the total, $8.9 billion was allocated in support of educational activities. In that same year, the states provided $52.0 billion to local governments to support similar activities, of which $31.1 billion was allocated for education. On the average, of the $245 per capita state aid to local governments, almost $146 per capita was used in support of educational activities (Advisory Commission on Intergovernmental Relations, 1977, pp. 56-59). Thus, while the federal government provides some funds in support of education, the primary support for education is generated by state governments. This situation reflects certain provisions of the U.S. Constitution, which delegates responsibility for the promotion of education to the states, and the development of education as a public function.

The majority of intergovernmental grants provided in the financing of education are at the elementary/secondary school level, from states to elementary/secondary school districts. Up until the middle of the 19th century, the funding of elementary/secondary education was considered primarily to be a function of local jurisdictions. The states have become more involved in providing support out of a desire to avoid excessive differentials in both educational opportunities and the tax efforts needed to provide them among local school districts. State aid to promote these ends has taken various forms. Over 70 years ago, Cubberley advocated the use of flat grants, equal payments per task unit, as a way for states to provide aid to local school districts. His rationale for such a system was that the responsibility of the state was to provide a minimum program for all pupils on an equal basis since all pupils are equally important (1906, p. 17). While this approach has increased state involvement in supporting education, the equalization impact of flat grants tends to be modest unless the grant is of sufficient magnitude that the state also constrains the use of local district revenues (Benson, 1968, p. 160).

An improved form of state support was provided through the foundation program plan developed by Strayer and Haig. They held that the primary objective of state aid was equalization, which was defined as the assurance by the state of equal education facilities to every child with a uniform tax burden (1923, p. 162). Under such a system, the

state was to establish a level of expenditure required to provide minimum educational opportunities, while each district was to tax itself at the rate equal to the one that the most affluent district would be required to use to raise that amount of revenues. Every district with less wealth than the most affluent would raise less revenue than was expected at that tax rate and the state would supplement local revenues to the extent necessary (Benson, 1968, p. 161). The foundation plan, later modified by Mort so that a "key" district rather than the richest district was used as a standard, has been criticized primarily since, in practice, the foundation expenditure level tends to be low, usually a statewide average figure, and since no equalization occurs above that level (Coons et al., 1970, p. 71).

Updegraff and King developed another approach to school finance based on an equalized state matching grant, commonly referred to as a percentage-equalizing formula. Under this system, the state pays a proportion of a school district's expenditures, with the proportion inversely related to the relative wealth of the school district. This system, like the foundation plan, requires that the state select a key district; and, unless that district is the wealthiest one in the state, the percentage equalizing formula may provide equalization to some, but not all, districts (Coons et al., 1970, p. 172).

In the purest form of a percentage-equalizing formula, district power equalizing, all districts can theoretically be equalized, that is it can be guaranteed that the sum of state and local revenues per pupil received will be equal for districts taxing themselves at the same rate. Under this system, the wealthiest districts would yield to the state any local revenues collected in excess of that guaranteed by the state at a particular tax rate. The implementation of a percentage-equalizing formula in any of its forms has tended to be undertaken in conjunction with other state aid provisions, including flat grants, hold harmless guarantees or partial recapture provisions, all of which tend to reduce the equalization that is accomplished. In pure form, however, it is generally recognized that a district power-equalizing system of providing state aid to local school districts is an acceptable way, other than complete state funding of elementary/secondary education, to meet the legally mandated standard of fiscal neutrality (Pierce et al., 1975, p. 41). Such a system, however, does not guarantee that the pupil expenditures of districts will be equal. In order to promote both fiscal neutrality and expenditure equality, it often becomes necessary for states to impose restrictions on expenditures, tax rates or state aid.

State support of postsecondary education has not involved intergovernmental fiscal adjustments such as those used in the support of elementary/secondary education because the institutions providing

such education are not sponsored by lower-level governments but, rather, are either entities of the state or privately controlled. Only the community college, of all postsecondary institutions, is governed by a local agency that, in many states, has the power to tax its residents. The community college evolved out of the elementary/secondary school system and did not develop, like other postsecondary education institutions, independently. Early proponents of community colleges viewed them as a vehicle that, in conjunction with elementary/secondary schools, would provide 14 years of free education to all citizens.

If, in fact, community colleges simply offered educational opportunities equivalent to the 13th and 14th grades and either attendance at those grade levels were mandatory or no other institutions offered similar educational opportunities, it would be easier to justify their being funded in a manner similar to the way in which elementary/secondary schools are funded, using the intergovernmental fiscal adjustments that have been developed to alleviate the problems of those institutions. Community colleges, in the form they exist today, do not always offer unique programs of study; and attendance at a community college or any other postsecondary educational institution is not mandatory. Community colleges continue to offer educational opportunities to individuals for whom access to traditional colleges is difficult, including those for whom cost, academic entrance requirements or location are sufficiently strong barriers to prohibit attendance at traditional institutions. In addition, community colleges provide educational opportunities that are insufficiently provided at traditional institutions, including vocational, avocational and nondegree courses. Finally, community colleges have a strong commitment to fulfilling the needs of the geographical areas they serve by offering extensive public services as well as training designed to meet the needs of the local economy (Garms, 1977, pp. 36-37).

In order to provide this combination of educational opportunities, community colleges have tended to obtain only a small proportion of their total revenues from students while requiring some contribution from the local districts they serve. A goal of community college advocates over the past few decades has been to have the state accept greater responsibility for providing institutional revenues, although some debate has been generated concerning what proportion of state support is sufficient to promote institutional fiscal vitality without eliminating local control. Between 1929 and 1968, state aid to community colleges increased from an average of less than 5 percent of all revenues to nearly 50 percent of all revenues (Wattenbarger and Cage, 1974, p. 20).

Today, wide variations exist among the states in the proportion of revenues provided to community colleges by students, local districts and states. Tuition is charged in all states except California, where it is under consideration in light of the recently passed Proposition 13; and although community college tuition levels tend to be low compared to those of other collegiate sectors, they vary among institutions within states and, on the average, among states. In 20 states, the contribution of local community college districts in 1975-76 exceeded 10 percent of all institutional revenues, not considering those related to auxiliary enterprises, as shown in Table 1. These states enrolled over 70 percent of all students in community colleges; and they tended to have higher per student expenditure levels, on the average, than states in which less than 10 percent of institutional revenues were received from local community college districts. Tuition levels did not vary widely, on the average, between states in which local revenues were greater than and less than 10 percent of all revenues to community colleges.

Table 1
Selected 1975 Community College Finance Statistics for the States

State	Local Revenues as a Percentage of Current Fund Revenues [a]	FTE Student Enrollment [b]	Current Fund Revenues Per FTE Student	Tuition and Fee Revenues Per FTE Student
California	42.9%	617,339	$1,604	$ 33
Wisconsin	42.0	48,373	2,737	191
New York	33.7	188,347	2,359	450
Illinois	33.5	144,712	1,663	272
Oregon	32.2	41,411	1,847	323
Kansas	31.1	19,118	2,006	320
Wyoming	29.7	5,590	2,211	272
Arizona	29.1	50,912	1,563	126
Maryland	28.8	44,135	1,947	484
New Jersey	28.7	54,679	1,911	446
Missouri	27.4	33,951	1,523	333
Michigan	23.6	110,774	1,701	369
New Mexico	23.0	4,188	2,118	493
Montana	22.3	1,924	1,564	214
Mississippi	18.1	28,386	1,448	192
Idaho	17.8	2,829	2,462	305
Ohio	14.2	63,219	1,720	503
Pennsylvania	12.0	66,185	2,405	686

[a] Current fund revenues exclude revenues from the sales and services of educational activities, auxiliary enterprises and hospitals. Local revenues are for appropriations only and exclude grants and contracts. Source: P. F. Mertins and J. J. Brandt, *Financial Statistics of Institutions of Higher Education, Current Funds Revenues and Expenditures, Fiscal Year 1975.* (Washington, D.C.: National Center for Education Statistics, U.S. Government Printing Office, 1977).

[b] FTE students are calculated by adding all full-time students to one third of all part-time students. Source: Marie Eldridge, National Center for Education Statistics, 1977. Prepublication release of final enrollment data for 1975.

Table 1 (continued)
Selected 1975 Community College Finance Statistics for the States

State	Local Revenues as a Percentage of Current Fund Revenues [a]	FTE Student Enrollment [b]	Current Fund Revenues Per FTE Student	Tuition and Fee Revenues Per FTE Student
Texas	12.3	147,910	1,486	240
Oklahoma	10.5	26,019	1,057	205
Iowa	8.6	24,482	2,324	525
North Carolina	8.5	66,718	1,963	139
Colorado	7.8	25,934	1,591	312
South Carolina	7.4	33,061	1,292	272
Tennessee	6.8	21,177	1,435	217
Arkansas	5.5	5,603	1,305	235
North Dakota	4.2	6,124	1,767	416
Georgia	3.9	28,463	1,370	305
Massachusetts	1.5	43,058	1,392	306
Nebraska	1.0	9,495	1,983	229
Indiana	0.5	10,772	1,485	412
Washington	0.5	78,124	1,503	267
Alabama	0.0	38,888	931	213
Alaska	0.0	2,835	6,124	457
Connecticut	0.0	22,153	1,887	283
Delaware	0.0	4,249	2,361	376
Florida	0.0	112,971	1,847	379
Hawaii	0.0	14,979	1,153	68
Kentucky	0.0	12,133	1,099	316
Louisiana	0.0	9,217	1,245	219
Maine	0.0	3,288	2,238	488
Minnesota	0.0	21,654	1,871	411
Nevada	0.0	9,191	540	128
New Hampshire	0.0	3,534	1,645	228
Rhode Island	0.0	5,552	2,035	298
Utah	0.0	9,185	1,675	270
Vermont	0.0	1,461	1,843	298
Virginia	0.0	51,352	1,296	254
West Virginia	0.0	7,298	978	189
Total: All States	24.2%	2,382,952	$1,725	$251
Total: States having local revenues in excess of 10% of current fund revenues	31.9%	1,700,001	$1,777	$239

[a] Current fund revenues exclude revenues from the sales and services of educational activities, auxiliary enterprises and hospitals. Local revenues are for appropriations only and exclude grants and contracts. Source: P. F. Mertins and N. J. Brandt, *Financial Statistics of Institutions of Higher Education, Current Funds Revenues and Expenditures, Fiscal Year 1975.* (Washington, D.C.: National Center for Education Statistics, U.S. Government Printing Office, 1977).

[b] FTE students are calculated by adding all full-time students to one third of all part-time students. Source: Marie Eldridge, National Center for Education Statistics, 1977. Prepublication release of final enrollment data for 1975.

The support of community colleges may not require intergovernmental transfers under precisely the same rationale that is used to

support such transfers from the states to elementary/secondary school districts. Since the education offered by community colleges is likely not to be considered of "fundamental" interest to the state, it seems unlikely that legal remedies would be forthcoming to eliminate whatever current inequities do exist among community college districts (Nelson, 1977, p. 10). The issue of whether current state support mechanisms violate state constitutional provisions is, however, open to debate since no legal action has ever addressed this issue. Nonetheless, a portion of what goes on at community colleges involves the provision of general postsecondary educational opportunities for which the states provide support at other institutions. While the states do not make participation in such educational experiences mandatory, it is clear that the states are attempting to provide to all individuals at least an equal opportunity to pursue such educational experiences. It seems rational for the state, under these conditions, to equalize the education resources available to students who decide to pursue such educational opportunities and to provide appropriate incentives to local districts to provide such opportunities.

II. Problems in the Funding of Community Colleges

Criteria For Assessing Community College Finance Systems

Recently, analysts of community college financing have attempted to establish criteria against which to assess how well a particular fiscal system operates. While there is not universal acceptance of these criteria, the fact that they are discussed at all indicates some movement away from the purely hortatory recommendations for increasing state aid to the determination of appropriate funding levels on the basis of an analysis of the effects they have on community colleges. Wattenbarger and Cage have reported the results of a 1969 study by Arney that produced one set of criteria by which to evaluate state support systems. Arney's criteria were derived from those being used by states to evaluate their own support systems. As such, the criteria were influenced by state historical patterns and political necessity. Arney's criteria included the following:

1. The state should consider the community college level of education to be a part of the publicly supported system of education as evidenced by a state provision of support.
2. The state should provide equal educational opportunities to any individual who might benefit from a community college education.
3. The state should provide support for all programs offered by community colleges, including those for which credits are not offered.
4. The state should provide for coordination of community colleges and, through a charge-back tuition system, make provision for districts without community colleges to share in funding the expenses for their residents who are attending such a college in another district.
5. Local support should be provided to community colleges.

Arney did not discuss the specific way in which local and state support could be coordinated; and his analysis of the states was an examination of the extent to which the state, local districts and students provided revenues to community colleges. The implication was that no revenues from students, low revenues from local districts and high revenues from the state would maximize a state's assessment against these criteria. Similarly, while Wattenbarger and Cage

called for objective formulas to be used in distributing state aid, they did not attempt to evaluate the effects of alternative distributional systems, such as flat grants or matching grants, against Arney's or any other set of criteria (1974, Chapter 6).

Lombardi has discussed the need for providing incentives to promote institutional efficiency among community colleges. Although he also reviewed the state allocation formulas used by states, he did not make specific recommendations about how to introduce incentives that would promote such efficiency (1973). Wattenbarger and Starnes have most recently examined state support patterns for community colleges. While they discussed criteria similar to those mentioned previously, they did not attempt to assess how well each of the state's financing systems met those criteria. In addition to their review of the states, however, they did mention certain characteristics of all formulas that could have a negative effect on community college operations, particularly in periods when enrollments were declining. These characteristics all are based on the average cost approach taken by most formulas, under which costs are not differentiated by program, economies of scale are not taken into account and marginal costs are not used to differentiate between the costs of new programs and those of well-established programs (Wattenbarger and Starnes, 1976). While some states do consider variations in institutional and program characteristics, few of them have incorporated factors related to declining enrollments, the different costs associated with part-time and full-time students or the geographic location of the institution.

Garms has recently completed the most extensive analysis of the alternative ways in which states and local districts can share the burden of supporting community colleges (1977). He identified nine criteria by which to judge community college systems. He argues that the public finance system should promote:

1. The elimination of barriers to attendance.
2. The offering of courses not available at other postsecondary institutions.
3. Responsiveness by institutions to community preferences.
4. The preservation of independent institutions.
5. The expansion of institutions within fiscal constraints.
6. The prevention of program duplication among institutions.
7. Institutional efficiency.
8. Inter-student equity, in terms of expenditures and tuition payments.
9. Inter-district equity, in terms of tax burdens.

Garms discussed the general characteristics of several types of

financing systems in current use and assessed those systems against these criteria. Some of these criteria match those identified by other analysts. Some are shared by institutional sectors other than community colleges. Most are very general in nature and are difficult to define or measure. Having judged that no finance systems actually used by states met each of the criteria well, Garms proposed a scheme, a modified power-equalizing system with a state aid program to relieve the impact of a relatively high-tuition requirement, that he felt best met all criteria when a state required the provision of local district revenues. Under the system, tuition would be set at a level to furnish 50 percent of the current operating expenditures of each institution, while the state would guarantee a level of revenue per capita, rather than per student as is recommended for elementary/secondary school finance programs, at every possible tax rate. One of the primary arguments supporting the use of per capita rather than a per pupil measure of fiscal capacity for community college districts is that the institutions are designed to serve a broad population, although attendance is not compulsory. By using a per capita measure, community colleges would not be given an incentive to expand their enrollments at state expense. Garms' plan also called for additional financial aid to be distributed as an entitlement to individual students based on an assessment of their financial needs.

It is clear that there is not agreement about what the goals of community colleges are or what the role of the state should be in providing support for them. The states differ dramatically in their methods of support as well as in the level of support they provide for community colleges. Finally, the institutions are entering a period of declining enrollment and fiscal constraint that requires new approaches to financing.

Inter-Sectoral Finance Issues

Essentially, there are three problems that result from the current ways by which states support community colleges. First, in most states community college funding is isolated from the funding of other educational institutions. Community colleges tend to receive a different amount of support per student than other public postsecondary institutions. At the same time, community colleges tend to enroll students from lower-income groups as compared to other public institutions. Based on 1976 national standards for college freshmen, the median family income of community college students was $13,200 as compared to a median family income of $14,500 for students attending public four year colleges and a median family income of $17,300 for students attending public universities (calculated on the basis of information contained in Astin, King and Richardson, 1977, p. 48). Consequently, lower-income students attend institutions

that often have lower expenditures than other public postsecondary institutions. Despite the lower tuition paid by community college students the equity of such a system has been questioned from several different points of view.

Hansen and Weisbrod's study of the California postsecondary system indicated that there was a redistribution of income from lower to higher income families, considering both the subsidies received through enrollment in a public institution and the taxes paid to support the public postsecondary system (1969). Several studies have drawn similar conclusions in other states (See Windham, 1976 and the Commission on Financing Postsecondary Education, 1976). It should be noted that Joseph Pechman and others contend that the calculations made in these studies, based on categories of users of the education system, are inappropriate for measuring equity since they do not consider intergenerational transfers (See Pechman, 1970 and Conlisk, 1977). In a review of the benefit/cost studies that have been completed and the criticisms of them, Nelson recommends that benefits and costs be studied separately (1978).

At least three other questions arise in connection with inter-sectoral expenditure or state support disparities. These questions are primarily related to efficiency concerns in the distribution of state support for postsecondary education. First, under a policy of accepting students independent of any academic criteria, with the debatable exception of a high school degree requirement, community colleges are expending increasingly larger amounts on students enrolled in remedial or developmental programs. The states must confront the issue of the extent to which they should support elementary/secondary education and, also, additional training at the same level in community colleges. Second, the state is the primary supporter of institutions and, as such, must be concerned about their financial stability as well as the extent to which institutions, individually or in groups, are contributing to the achievement of statewide education goals. State aid formulas used in the support of most postsecondary institutions do not take into consideration the financial vitality and viability of the institutions. It may be necessary in the future to distribute limited state funds in a manner that best promotes efficiency rather than through formulas that minimize inter-sectoral differences. Finally, states have tended to fund institutions on input criteria, the number of professors, square feet or library books thought to be necessary to provide an adequate education. These input factors have rarely been related to output products of institutions. It could be argued that the distribution of state funds to an institution should be based on its relative contribution to the state's educational attainment. Under such a system, community colleges

would conceivably be supported at a higher level per student than other types of institutions.

Inter-District Finance Issues

Because the majority of appropriations to community colleges from local districts are derived from taxes levied on the real property located in the district, a number of problems result. Since districts within a state differ in their property wealth, there is a variance among districts in the ability to raise equal amounts of revenue at the same tax rates. Such a variance may lead to concurrent variances in expenditure levels and/or tuition rates among districts.

Community college analysts have addressed this problem and have called for the inclusion of equalization aid in state programs that support community colleges. While many states provide financial support to community colleges through systems that do not alleviate the wealth disparity among districts, a number of states distribute state aid in a manner that is designed *ex ante* to reduce the possibility that district decisions concerning expenditure levels or tuition rates will be related to district wealth. Little empirical research has been conducted, however, that indicates either the extent to which such inter-district inequities exist in the states or the extent to which state aid contributes to alleviate any of the inequities that exist. One of the primary purposes of this paper is to fill this void.

There are a number of reasons why the extent of the inequities among community college districts might be smaller than the well-documented inequities that exist for elementary/secondary school districts. First, it is generally accepted that as state aid rises as a proportion of expenditures, inter-district expenditure or tax rate variations decrease since the local district's contribution to total revenues decreases. This becomes more complicated for community college districts because while the local district contribution may decrease with increasing state aid, the proportion of all revenues provided by tuition may still vary across districts.

Second, community college districts tend to be large, often including numerous elementary/secondary school districts; and their size should contribute to a reduction in the wealth disparity among districts as compared to that found among the elementary/secondary school districts of which they are comprised. Finally, since attendance at community colleges is not mandatory and students who choose to pursue a postsecondary education at all may do so at many of the over 3,000 institutions across the country, it is likely that the education preferences of the population of a community college district will be heterogeneous. This heterogeneity probably reduces the impact of district socio-economic characteristics in determining dis-

trict expenditure levels, a relationship that has been shown to exist among elementary/secondary school districts, with the likelihood that there will be less variation in expenditures among community college districts than is commonly found among elementary/secondary school districts.

Three studies have been undertaken that examine how state aid is distributed to local community college districts and the impact of that aid on equalization. These studies, in California, New Jersey and Illinois, demonstrated that, in fact, property wealth varied among community college districts, as did expenditures per student, and that the strength of the relationship between the two was reduced when state aid was considered. In New Jersey, it was shown that in 1975-76 the tax effort made by community college districts was only weakly correlated with the amount of local funds generated by the districts, one indication that a wealth-related problem could exist. One measure used to ascertain how well the distribution of state aid overcame this problem was tax power, the sum of local and state revenues per student per mill of local tax effort. It was shown that, under the flat-grant system used by the state to distribute grants to community college districts, differences in tax power persisted even after state aid was considered. The range in tax power was between $16.70 and $126.80 per student per hundredth mill of local tax effort. The standard deviation of tax power, which would be 0 if all districts had equal tax power, was $30.30. A second measure, the correlation between local tax effort and the sum of local and state revenues, proved to be weak (Commission on Financing Postsecondary Education, 1977, p. 31). Several alternative state financing systems were examined within a similar framework although it was found difficult to compare the systems since the two measures of equity conflicted, making it difficult to determine which of the alternative systems was the most equitable.

The study in California examined the relationship between community college district expenditures and a set of variables that were expected to be important determinants of those expenditures. The authors of the study emphasized that the critical differences between elementary/secondary schools and community colleges was the lack of a mandatory attendance requirement at community colleges, resulting in a variance not only in wealth and expenditures among community college districts but also in the proportion of the population attending the institutions. They found that "state aid (permitted) higher participation, and because participation overshadows the relationship between average per capita income and wealth in districts, and because participation is negatively related to income, the net effect of state equalization aid is to equalize per student spending and tax rates" (Cothran and Thompson, 1976, p. 7). This analysis

relied heavily on correlation statistics, with the conclusion drawn about the influence of state aid based on the relationships between a number of variables. The analysis also focused on individual taxpayer equity rather than on inter-district equity. As such, the study raised important questions about equity but did not clearly test the degree to which the actual state aid system, or alternative systems, contributed to improving inter-district equalization.

The study of equity in the funding of Illinois community colleges, unlike the others, was longitudinal, examining the distribution of state aid for the years 1974 through 1977. It was concluded that state aid had some effect "in moving the state toward the goal of fiscal neutrality" although tuition and fees revenues apparently had a disequalizing effect. It was shown that, using several measures of fiscal equity, greater equity was achieved in 1974 than in 1977 and that this resulted, in large part, from the increasing proportion of total revenues supplied by tuition and fees (Kinawong, 1978).

There are several reasons why disparities in expenditures would be likely to exist among community college districts. First, different education programs require different expenditure levels and since students are free to choose the programs in which they enroll, it is not unexpected that districts would, on the average, have different expenditure patterns. What should be measured in assessing inter-district expenditure disparities is the extent to which actual average expenditures differ from some expected average expenditure level, based on differential program costs, as well as the degree to which discrepancies from the expected expenditure level are related to district wealth. In addition, district expenditure levels are related, in part, to tuition levels. Actual expenditures need to be compared to the expenditures that could have been made had some statewide average tuition charge been required by the district. Districts may, in fact, be required to have different expenditure levels in order to attract staff of equal quality. Cost-of-education variations among districts would cause permissible disparities in expenditures for personnel as well as other factors related to the provision of educational opportunities. Only when these differences in program cost, program enrollments and tuition level are controlled can an appropriate examination of the inter-district expenditure disparities and their relationship to district wealth be made.

Two additional difficulties that arise in assessing the relationship between expenditures and wealth for community college districts involve the definition of district wealth and the determination of the appropriate task unit for measuring both expenditures and wealth. Like elementary/secondary school districts, community college districts rely primarily on assessed property as the tax base. In both

situations, however, property owners pay their taxes out of their current incomes; and the distribution of income is not necessarily highly related to the distribution of property wealth among district residents. When property wealth is used as the measure of fiscal capacity in the distribution of state grants to local jurisdictions, it is possible that state funds may not relieve the tax burden on less-affluent individuals. This becomes a particular problem when either the proportions of commercial, residential, agricultural or vacant property differ among districts or property assessment practices differ among districts, situations that have been documented in elementary/secondary school finance. Several states currently incorporate district income in assessing district wealth for the purpose of distributing state aid for elementary/secondary schools. In states where income is not considered directly, property tax relief measures, such as circuit breakers, have been used to limit the property tax liability of individuals in light of their income.

In terms of the second difficulty, the task unit, there has been little debate in the elementary/secondary school arena that the appropriate task unit is the pupil and that expenditures and wealth, however defined, are best measured in per pupil terms. This is true since differences among the number of persons of school age are not viewed as being under district control, while most children of that age attend public schools. The difference at the community college level is, of course, that attendance is not mandatory, with the result that districts can differ widely in the proportion of district population they serve. A more appropriate funding unit for the community college district may be the resident rather than the enrolled student. Using this unit, the wealth measure would not be sensitive to differences in the services provided by districts but would focus on the tax base per potential user of the service. A number of public services are supported through intergovernmental grants based on such a per capita wealth measure, including federal revenue-sharing programs and a number of state welfare, health and education programs. The use of the per student or per capita measure is likely to result in both different incentives for district behavior as well as differences in the characteristics of districts that would receive relatively greater amounts of state aid (Augenblick, 1977). For the purposes of this report, the task unit will be the student, on an FTE basis when possible. This decision has been made in light of the fact that the task unit of the institution is its enrolled students and enrollments have not fluctuated greatly over the past few years, indicating that institutional restrictions on or expansion of places has probably not occurred. This decision also reflects the author's attitude concerning the responsibility of the state toward community colleges and the notion that while participation is optional, the state should not per-

mit local decisions to restrict the availability of educational opportunities.

Inter-Student and Tuition-Related Finance Issues

Traditionally, community colleges have sought to provide programs at very low cost or no cost to students, not including "maintenance" or living expenses incurred by the student. As indicated previously, tuition levels have been increasing at a rapid rate among community colleges, although even a large proportional increase on an already low-tuition level may result in only a modest absolute increase. The real problem, however, is that tuitions can vary more widely among community college districts than median family incomes; and, in conjunction with the inter-district equity problem cited above, such a situation can result in less wealthy districts having to charge a higher-tuition level than their more affluent neighbors in order to provide a program of similar total cost. While the state can tolerate some variation in tuition level, in part to permit local control of community colleges, it should consider the different abilities of students' families to meet tuition costs, much as it should consider the different abilities of local districts to provide support to community colleges. Some states have set a tuition ceiling, permitting a variation in tuition levels among institutions below the ceiling. In the case of high-tuition levels the state can promote access to community colleges through the distribution of student financial aid. Of course, the lower the ceiling, the less variation there is likely to be in tuition levels among institutions. Similarly, with a lower tuition ceiling it is less likely that students will require, or even be eligible for, student aid since most student aid programs normally have a student "self-help" component that can be as high as $500.

If student financial aid is a mechanism used by the state to equalize the burden of community college costs for its students, several problems must be considered. First, states often discriminate among students for the purposes of distributing student aid. Part-time students, particularly those enrolled less than half-time, are often ineligible for aid. Larger numbers of part-time students attend community colleges than any other sector. Second, there has been some concern expressed about the system used by colleges to assess the financial position of students and their families. One problem receiving increased attention is the inability of the financial aid system appropriately to recognize independent students. Again, this problem has a large impact on community colleges since they enroll a disproportionate share of independent students compared to other institutions. Finally, there is the problem of student maintenance expenses. Students incur expenses in attending community colleges that exceed

tuition and fee costs. While federal student aid programs are viewed by some as aimed primarily at these additional expenses, states should consider the impact of their policies on the flow of federal student aid since many of these programs, particularly basic grants, are sensitive to these expenses, in addition to tuition.

III. Community College Finance Systems in the States

Typically, community college districts determine the expenditure levels of their institutions within the constraints imposed by state aid receipts, tuition levels and local willingness to support the institutions through property taxes. State support of community colleges is usually generated through a formula that provides either a fixed amount per student or a proportionate amount of the cost per student.

Current systems of state support for community colleges are summarized in Table 2. Most states, regardless of whether local districts provide revenues to institutions, use a flat-grant aid system. Most states use the FTE student as the unit of funding. Some states differentiate the support they provide on the basis of institutional characteristics, program characteristics or student characteristics. Among institutional characteristics, size and cost variations have received attention. The number of programs for which cost differentials are calculated tends to be at least 2, liberal arts and vocational education; but in some states, more than 20 programs may be considered. When student characteristics are considered by states in providing direct support to community colleges, they include the level at which the students are working or their legal residence. Most states attempting to deal with inter-district variations in property wealth do so through a foundation program, a relatively ineffective mechanism, as discussed previously, unless the foundation level is set high relative to actual costs. What is not included in Table 2 is the state's policy toward either the local district contribution or the tuition level. Some states establish maximum rates at which local districts can tax themselves. Such a mechanism clearly discriminates among districts since they differ in the amount of revenue that can be generated at that rate. Some states also impose limits on the tuition that can be charged to students. In conjunction with other state financing policies, a tuition limit can result either in a large tax burden being placed on local districts or in districts having to restrict their expenditures.

In order to more carefully examine the impact of these systems of state support, four states have been selected for further study in the remainder of this booklet. These states, Mississippi, New Jersey,

Table 2
Characteristics of Systems of State Support for Community Colleges in 1976 [a]

State	Unit of Funding [b]	Type of State Support	Differential for Institutional Characteristics	Differential for Program Characteristics	Differential for Student Characteristics
Alabama	institution	flat grant	no	no	--
	FTE student	flat grant	no	no	no
Alaska	credit hour	flat grant	no	no	no
Arizona [c]	FTE student	foundation program	yes, size	yes	no
Arkansas	faculty position	flat grant	no	yes	no
California [c]	student in ADA	flat grant	no	no	no
	student in ADA	foundation program	yes, size	no	yes, adults v. nonadult students
Colorado	state operated: none locally operated:				
	FTE students	flat grant	no	yes	yes, state residents only
Connecticut	none				
Delaware	none				
Florida	FTE student		yes, size and cost of living	yes	no
Georgia	faculty positions	flat grant	no	no	no
Hawaii	credit hour	flat grant	yes, differential among islands	yes	no

[a] Based on information contained in Wattenbarger and Starnes, *Financial Support Patterns for Community Colleges, 1976.*

[b] "None" as a designation for a state's unit of funding indicates that a formula is not used in allocating state aid to community colleges. Under these circumstances, institutional appropriations are generally negotiated.

[c] States in which local revenues exceeded 10 percent of all revenue from state, local and student sources.

Table 2 (continued)
Characteristics of Systems of State Support for Community Colleges in 1976 [a]

State	Unit of Funding [b]	Type of State Support	Differential for Institutional Characteristics	Differential for Program Characteristics	Differential for Student Characteristics
Idaho [c]	none				
Illinois [c]	credit hour FTE student	flat grant foundation program	yes	yes	no
Indiana	none				
Iowa	FTE student	flat grant	yes, enrollment decreased	yes	no
Kansas [c]	credit hour	flat grant	no	no	no
Kentucky	none				
Louisiana	credit hour	flat grant	yes, in some programs a reduction occurs for size	yes	no
Maine	none				
Maryland [c]	FTE student	proportion of expenditures up to a flat grant limit	yes, two small colleges are treated specially	no	no
Massachusetts	none				
Michigan [c]	FTE student	foundation program	yes, size and number of campuses	yes	no
Minnesota	faculty position	flat grant	no	no	no
	institution	flat grant	no	no	–
Mississippi [c]	institution	flat grant	no	no	no
	FTE student	flat grant	no	yes	yes, resident day students v. part-time and evening students
Missouri [c]	credit hour	proportion of expenditures up to a flat grant limit	no	no	yes, state residents only
Montana [c]	institution	flat grant	no	no	no
Nebraska	FTE student	flat grant	no	no	no
Nevada	faculty position	flat grant	no	no	no
New Hampshire	none				

New Jersey [c]	FTE student	proportion of expenditures up to a flat grant limit	no	no	no
New Mexico [c]	FTE student	foundation program	no	no	no
New York [c]	FTE student	proportion of expenditures up to a flat grant limit	yes, full opportunity v. nonfull opportunity campuses	no	yes, disadvantaged student ratio must be same as in population
North Carolina	instructional unit, relationship between faculty positions and FTE students	flat grant	no	yes	no
North Dakota	student in attendance	flat grant with a requirement for a local contribution	no	no	no
Ohio [c]	FTE student	flat grant	no	yes	yes, by student level
Oklahoma [c]	FTE student	flat grant	no	no	no
Oregon [c]	FTE student	flat grant	yes, size	no	yes, state residents v. nonstate residents
Pennsylvania [c]	FTE student	proportion of expenditures up to a flat grant limit	no	yes	no
Rhode Island	none				
South Carolina	FTE student	flat grant	yes, size and cost of living	yes	no
Tennessee	credit hour	flat grant	no	yes	yes, level
	institution	flat grant plus proportion of the credit hour grant	no	no	--
Texas [c]	contact hour	flat grant	no	yes	no
Utah	none				
Vermont	none				
Virginia	FTE student	informal formula used	no	yes	no
Washington	FTE faculty	flat grant	no	yes	no
West Virginia	faculty position	flat grant	no	yes	no
Wisconsin [c]	FTE student	percentage equalizing	no	yes	no
Wyoming [c]	FTE student	foundation program	yes, size	yes	no

[a] Based on information contained in Wattenbarger and Starnes, *Financial Support Patterns for Community Colleges, 1976.*

[b] "None" as a designation for a state's unit of funding indicates that a formula is not used in allocating state aid to community colleges. Under these circumstances, institutional appropriations are generally negotiated.

[c] States in which local revenues exceeded 10 percent of all revenue from state, local and student sources.

California and Illinois, were chosen because a local district contribution to community college revenues is made, because they use a variety of support systems and have different levels of state support, and because they represent broad geographic differences that are likely to be influential in determining attitudes toward the financing of community colleges. In this section of the booklet, the systems of support used by these states in 1975-76 will be described; and some basic information about the impact of the system will be presented. In the description of state aid systems a discussion of the historical development of the community college system and the state role in its financing will be presented. In addition, tuition policy and state limits on local districts, including tax or budget limitations, will be identified. In the next section, these systems will be analyzed in relation to some of the problems discussed previously.

Community College Finance in Mississippi

Since 1922, governing authorities of counties have had the authority to levy countywide property taxes in order to support community colleges (referred to as public junior colleges). The statutory limit on taxes used to support the education and general budgets of community colleges is three mills, with the exception of one fiscally independent district for which the tax limit on participating counties is four mills. State appropriations for community colleges has been provided since 1928. The method of distributing state aid in 1975-76 included several components. First, each institution received $10,000 for academic program support. In addition, $1,022 per full-time resident day student enrolled in academic or technical programs was provided in 1975-76. In support of vocational education, each institution received $31,250 from the state and $65 per full-time resident day student.

The state also provided approximately $110 per FTE academic student enrolled on a part-time basis or in academic evening classes. Finally, the state distributed grants and reimbursements for specialized instructional activities. Tuition was charged by all community colleges in 1975-76. Of the total revenues collected by the community colleges in 1975-76, 30 percent came from state formula support, 13 percent came from other state support, 19 percent was generated by local district taxes, 14 percent came from students, and the remainder came from federal and other sources.

Basic information for Mississippi's 16 community college districts is shown in Table 3A. For the purpose of display, districts have been ranked, from lowest to highest, by their unequalized property wealth per FTE student. No system of equalizing property assessments is

used in Mississippi. This makes it extremely difficult to compare districts since measuring district wealth is not done uniformly. As shown in column (3) the property base upon which each district relies to generate funds varied substantially, by almost a 6:1 ratio between the highest- and lowest-wealth districts. While most districts had total revenues between $1,500 and $1,800 per FTE student, there was almost a $900 disparity between the district with the most revenues per student and the district with the least revenues per student. Local district revenues also varied across districts, as shown in column (5) as did the average tax rates that must be charged to raise those revenues. Tuition and fees revenues per student varied by about $250 among the districts.

Table 3A
1975-76 Community College District Finance Data for Mississippi on a Per FTE Student Basis

(1) District Number [a]	(2) FTE Enrollment	(3) Property Wealth	(4) Total Educational and General Revenues	(5) Local District Revenues	(6) Local District Tax Rate [b] (Mills)	(7) Tuition and Fees Revenues
12	1,811	$ 50,248	$1,685	$182	3.62	$291
9	1,766	54,360	1,564	180	2.94	277
1	1,287	84,693	1,762	151	1.78	268
7	1,551	94,778	1,776	353	3.73	291
11	3,970	96,725	1,887	383	3.91	362
15	997	100,301	1,195	195	1.95	211
8	2,012	101,392	1,705	290	2.86	196
5	4,191	103,794	1,809	230	2.22	347
3	835	112,575	1,476	288	2.55	195
13	2,254	120,674	1,621	233	1.94	253
2	1,313	140,899	1,814	431	3.06	335
14	1,460	148,630	1,579	292	1.97	180
6	1,063	205,080	1,560	342	1.66	142
10	1,446	230,982	1,706	275	1.19	198
4	758	234,828	1,993	546	2.32	307
16	994	298,793	2,074	640	2.24	106

[a] District numbers are based on the alphabetical order of the names of districts.

[b] Calculated by dividing column (5) by column (3) and multiplying the quotient by 1,000.

Source: Data provided by the Division of Junior Colleges, State Department of Education, Jackson.

Community College Finance in New Jersey

The community college system was organized in New Jersey in 1968 with each county or groups of counties having the capability to operate an institution. The original legislation called for the state to provide 50 percent of community college expenditures or $600 per FTE student, whichever was less. In 1975-76 each college was spending in excess of $1,200 per student, so state aid was at its maximum

level. In fact, because of fiscal constraints state appropriations were based on estimated numbers of students with no adjustments made for the fact that actual enrollments exceeded the budgeted enrollments by 28 percent. Tuition levels were set by the individual institutions but could not exceed $400 per year as mandated by the state. Of the total revenues received by the community college system, 29 percent came from the state, 29 percent was derived from tuition and fees and 35 percent came from county appropriations.

Background information for New Jersey community colleges is shown in Table 3B. In 1975-76 there were 21 counties in the state, with 15 counties operating a single community college, 1 county coordinating a technical institute and a two year private college, and 1 county contracting for services through a community college commission. The information shown in the table is for the 15 counties operating a single institution and the 1 county operating two institutions.

New Jersey community colleges have been ranked by equalized assessed property wealth per student in column (3) of Table 3B. As shown, there was a wide disparity between districts in terms of this measure of wealth; the district with the most property wealth per student had almost seven times the wealth of the district with the least property wealth per student. Total revenues per student, shown in column (4) also varied across districts, with an $800 difference between the district having the most revenues per student and the district having the least revenues per student. While a majority of districts provided between $500 and $700 of revenues per student, there were a number of districts providing revenues outside this range, as shown in column (5). Tax rates varied substantially across districts as indicated in column (6). Tuition and fees revenues per student were similar for most districts, although 14 of the districts exceeded the $400 tuition limitation when fees are included. Personal income per student for New Jersey community college districts, as shown for 1974 in column (8), indicated wide disparities among districts, with a magnitude equal to that found for property wealth.

Community College Finance in California

California has the largest community college system in the country, enrolling nearly four times as many students as the state with the next highest head-count enrollment in 1976. The 107 institutions in the system are organized in 70 community college districts, which have developed since 1911. Between 1917, when the state legislature first established a system for financing the institutions, and 1947 each elementary/secondary school district operating a community

Table 3B
1975-76 Community College District Finance Data for New Jersey on a Per FTE Student Basis

(1) District Number [a]	(2) FTE Enrollment	(3) Equalized Property Wealth	(4) Total Revenues	(5) Local District Revenues	(6) District Tax Rate [b] (Mills)	(7) Tuition and Fees Revenues	(8) Personal Income [c]
1	3,184	$ 684,141	$1,603	$526	.77	$570	$ 302,544
8	5,123	691,362	1,722	605	.88	509	364,493
5	1,509	695,052	1,438	448	.64	499	439,629
14	683	860,932	2,250	607	.71	469	521,523
3	4,150	937,815	1,731	622	.66	512	418,988
4	5,142	938,530	1,631	612	.65	386	471,587
10	6,311	1,042,274	1,652	662	.64	395	471,938
7	2,059	1,067,296	1,673	699	.66	445	412,773
9	7,308	1,153,770	1,555	522	.45	455	504,803
11	5,846	1,182,008	1,572	281	.24	592	478,738
6	6,623	1,248,740	1,821	764	.61	470	847,003
16	5,936	1,327,155	1,376	371	.28	441	665,195
12	3,542	1,526,208	1,447	548	.36	444	453,331
15	1,992	1,875,426	2,032	875	.47	651	751,657
2	6,573	2,398,043	1,801	618	.26	509	1,063,959
13	1,282	4,312,820	1,872	852	.20	562	2,114,587

[a] District numbers are based on the alphabetical order by the names of counties.

[b] Calculated by dividing column (5) by column (3) and multiplying the quotient by 1,000.

[c] Calculated on the basis of 1974 total personal income of counties.

Source: Data provided by the County College Office, Department of Higher Education, Trenton.

college received from the state a flat grant per student in average daily attendance (ADA). Separate community college districts received the same per student flat grant and a $2,000 grant to the district. Local districts were required to match the state grants with local funds, and the imposition of tuition charges was prohibited. In 1947 the legislature established a foundation program for the support of public education from elementary school through community college. Under this system, community colleges received the difference between what a local tax of 2.1 mills would raise and $200 per student. The state provided basic aid of $90 per student regardless of the contribution of local districts. A maximum tax limit of 3.5 mills, without voter approval, was established. In 1953 students were divided into two categories for the purpose of distributing state aid, those enrolled for less than 10 class hours per week, and over 21 years of age, and all others. State reimbursement levels under the foundation program differed for these two groups.

In 1962 the $2,000 flat grant to community college districts was eliminated, while the foundation level was increased to $543 per student; the required local tax rate was increased to 2.4 mills, and basic aid was raised to $125 per student. Despite the fact that a 1960 study had recommended that the state provide 45 percent of the statewide revenues of community colleges, the foundation level was never calculated to produce that level. Between 1962 and 1969 the foundation level was increased to $643 and the required local tax rate was increased to 2.5 mills. In 1973 the legislature extended to community college districts the revenue-limit controls it had placed on cities, counties and unified school districts in 1972. This limitation replaced the maximum nonvoted tax rate limit with a per student expenditure limitation based on 1972 expenditures, adjusted by inflation for later years. With an increase in the foundation level to $1,020 per nonadult student and despite an increase in the computational tax rate to 3.9 mills, the growth in enrollments resulted in a tremendous increase in state aid to the community colleges. Therefore, in 1975-76, an enrollment growth limit was established, restricting state support to no more than 105 percent of the students enrolled in the previous year. In 1975-76 the state provided 43 percent of the total support for the community colleges, while local districts provided 45 percent of the total support. The remainder of total support was provided by federal funds, county funds and student fees (California Postsecondary Education Commission, 1977, pp. 1-11).

Basic information for California community colleges is displayed in Table 3C. The districts have been ranked from lowest to highest in terms of equalized assessed property wealth per student, and only average data for deciles of districts is shown. The figures in par-

Table 3C
1975-76 Community College District Finance Data for California on a Per ADA Student Basis

(1) Deciles of Equalized Property Wealth	(2) Total ADA in Decile	(3) Equalized Property Wealth	(4) Total Revenues	(5) Local District Revenues	(6) District Tax Rate [a] (Mills)
1	82,563	$ 56,913 (.174) [b]	$1,380 (.119)	$ 310 (.395)	5.38 (.301)
2	88,118	71,699 (.039)	1,283 (.078)	391 (.178)	5.44 (.158)
3	105,250	79,32[illegible] (.033)	1,343 (.054)	476 (.085)	6.00 (.083)
4	78,120	85,19[illegible] (.016)	1,414 (.102)	555 (.162)	6.53 (.178)
5	78,421	89,689 (.022)	1,489 (.173)	533 (.131)	5.94 (.120)
6	40,687	96,403 (.039)	1,453 (.191)	564 (.346)	5.88 (.365)
7	73,163	118,034 (.057)	1,483 (.203)	743 (.253)	6.32 (.281)
8	69,108	127,999 (.020)	1,752 (.179)	834 (.217)	6.52 (.217)
9	122,499	146,212 (.073)	1,907 (.170)	1,049 (.165)	7.20 (.173)
10	30,973	335,306 (.810)	2,455 (.437)	1,850 (.604)	5.99 (.245)

[a] Calculated by dividing local district revenues per student by district modified assessed property valuation per student, multiplying the quotient by 1,000 and averaging over the districts within each decile.

[b] Figures in parentheses are coefficients of variation for district data within the decile.

Source: Data provided by the Chancellor's Office, California Community College System, Sacramento.

entheses in columns (3) through (6) indicate the coefficient of variation for districts included in each decile. This statistic, the standard deviation divided by the mean for a set of districts, is one indicator of the disparity found among the districts within each decile. The lower the coefficient of variation, the less disparity existed among districts within the decile. As expected, for most of the data displayed the disparity of the highest or lowest decile exceeded that of the intermediate deciles, indicating that disparities among all districts exceeded that shown among deciles of districts.

As shown in column (3), equalized property wealth per student varied substantially among the districts, with the average property wealth per student of the seven districts in the wealthiest decile having been approximately six times greater than the average property wealth per student of the seven districts in the poorest decile. While the majority of students were enrolled in deciles of districts with average total revenues per student within $200 of each other, the average total revenues per student of the decile of districts with the highest revenues was two times the average total revenues per student of the decile of districts with the lowest revenues, as indicated in column (4). Revenues provided by local districts varied substantially, as shown in column (5), and increased monotonically with wealth. Tax rates, shown in column (6), were similar across districts.

Community College Finance in Illinois

The community college system was organized in Illinois in 1965. In 1975-76 it was the second largest community college system in the country. Between 1965 and 1969 the system was funded by the state through a two-tiered flat-grant mechanism under which $11.50 per semester credit hour produced was paid to class I institutions, those located in districts that levied a separate community college tax on residents; and $9.50 per semester credit hour produced was paid to all other, class II districts. Tuition charges were permitted under this system at the discretion of the district; and in the initial year of operation, 13 of 19 districts levied a tuition charge of between $2 and $10.50 per semester credit hour of enrollment. In 1970 a recommendation was made to equalize the distribution of state support on the basis of the equalized assessed property of each district. Although the flat grant was increased to $15.50 per semester credit hour and class II districts were no longer recognized, no funds were appropriated specifically for the proposed equalization program. In 1972, however, $1.05 million of the total state appropriation of $48.2 million to community colleges were earmarked for an equalization program. In 1973 the flat grant was raised to $16.50 per semester credit hour, with an additional $2.50 to be paid per semester credit hour produced

in nonbusiness occupational courses; and $1.4 million was appropriated for the equalization program. In 1974 additional funds were made available to provide additional support for disadvantaged students and public service activities. In 1975 actual enrollments exceeded those used in making funding estimates by over 20 percent; the flat-grant rate was reduced proportionately, resulting in an $18.12 rate, with an additional $5.80 for nonbusiness occupational credit hours, although the equalization fund appropriation was $3.15 million. The distribution of the equalization aid was based on a foundation per student expenditure level of $508 and a 1.8 mill expected local district tax rate. In 1975-76, average per student community college expenditures exceeded $1,300, more than 2.5 times the foundation level. In that same year, tuition was charged in 38 of the state's 39 districts, with a range of between $4 and $17 per semester credit hour and an average of $9.70 per semester credit hour. In 1975-76, on the average, local districts provided $16.46 per semester credit hour through locally levied taxes.

Basic information for 37 of the 39 Illinois community college districts is presented in Table 3D. Two districts have not been included in the table. One of them is a fully state-supported school, and the other was opened a year prior to the 1975-76 year for which information has been displayed. As shown in column (3), equalized property wealth per FTE student differed among districts, with the wealthiest district having over seven times the wealth of the poorest district using this measure of wealth. Total revenues per FTE student, including all sources, are shown in column (4). The ratio of the highest- to lowest-average revenues per student was 2.5:1.0, although the absolute difference was over $1,400. Local districts provided substantially different levels of revenue to community colleges, as shown in column (5), at tax rates that varied between approximately 1.1 mills and 2.7 mills, as displayed in column (6). All community college districts received revenues from tuitions and/or fees in 1975-76; and while a majority of districts received between $250 and $450 per FTE student, the difference between the highest- and lowest-average tuition/fee revenue per FTE student exceeded $500, as indicated in column (7). Income wealth, displayed in column (8), also varied among the districts although the inter-district disparity, as measured by the range, was not as high as that found for proprty wealth.

A summary of the basic information for the four states is given in Table 4. The statewide mean value, statewide standard deviation and statewide coefficient of variation is shown for each of the variables previously discussed. Given different assessment practices, the means and standard deviations of the district property wealth per student and the district tax rate cannot be compared across states. However, the coefficient of variation for these two variables and all

Table 3D
1975-76 Community College District Finance Data for Illinois on a Per FTE Student Basis

(1) District Number [a]	(2) FTE Enrollment	(3) Equalized Property Wealth	(4) Total Revenues	(5) Local District Revenues	(6) District Tax Rate [b] (Mills)	(7) Tuition and Fees Revenues	(8) Personal Income [c]
31	1,773	$ 91,993	$1,160	$ 193	2.10	$106	$151,434
29	4,215	108,118	1,167	267	2.47	22	134,378
21	1,393	189,519	1,398	463	2.44	147	295,392
30	1,677	198,682	1,698	498	2.51	167	347,524
33	905	210,524	1,368	508	2.42	97	316,531
3	5,264	215,859	1,476	302	1.40	398	294,795
10	4,716	222,858	1,494	316	1.42	544	451,310
7	2,150	230,034	1,635	502	2.19	379	350,119
4	8,588	231,415	1,489	325	1.41	432	224,743
8	51,782	236,197	893	360	1.52	81	441,423
23	1,635	247,720	1,488	429	1.73	343	267,816
6	2,090	266,507	1,492	398	1.49	423	318,834
15	3,063	269,670	1,399	276	1.02	485	433,436
22	4,907	270,430	1,359	393	1.45	328	409,855
1	1,461	278,576	1,558	695	2.49	183	373,708
32	4,587	287,334	1,558	540	1.88	333	474,251
19	1,256	294,016	1,761	780	2.65	330	416,308
24	5,415	300,551	1,562	644	2.14	330	435,522
36	2,942	301,428	1,556	628	2.09	317	422,930
20	1,953	304,660	1,679	557	1.83	360	359,412
12	7,098	304,907	1,573	440	1.44	491	344,079
17	2,665	306,510	1,471	400	1.31	359	354,451
9	2,534	345,304	1,782	829	2.40	357	511,859
25	5,660	352,474	1,373	399	1.13	296	297,327
16	2,568	360,202	1,421	469	1.30	302	450,403

14	5,576	373,207	1,733	705	1.89	401	445,580
5	3,696	377,533	1,807	677	1.79	476	373,571
13	2,283	387,980	1,476	697	1.80	210	373,370
27	1,653	391,363	1,880	920	2.35	319	582,121
2	8,817	401,071	1,458	429	1.07	437	524,714
11	3,788	411,715	1,531	444	1.08	508	470,003
18	1,533	427,267	1,630	642	1.50	289	504,863
35	3,672	441,993	2,302	976	2.21	463	511,234
28	1,325	460,377	1,672	564	1.22	509	525,949
34	771	467,684	2,053	1,146	2.45	236	482,796
26	2,964	479,082	1,854	907	1.89	358	622,981
37	1,132	650,707	2,188	1,256	1.93	369	733,034

[a] District numbers are based on the alphabetical order of the names of districts.

[b] Calculated by dividing column (5) by column (3) and multiplying the quotient by 1,000.

[c] Calculated on the basis of adjustments to 1975 county per capita income data.

Source: Data provided by the Illinois Community College Board, Springfield.

Table 4

Means, Standard Deviations and Coefficients of Variation of Selected 1975-76 Finance Data for Community College Districts in Mississippi, New Jersey, California and Illinois

	Mississippi	New Jersey	California	Illinois
District Property Wealth Per Student				
Mean	$136,172	$1,371,348	$120,678	$316,094
Standard Deviation	$ 68,205	$ 877,253	$110,907	$108,792
Coefficient of Variation	.501	.640	.919	.344
Total Revenues Per Student				
Mean	$ 1,700	$ 1,699	$ 1,596	$ 1,578
Standard Deviation	$ 203	$ 218	$ 510	$ 265
Coefficient of Variation	.119	.128	.320	.168
Local District Revenue Per Student				
Mean	$ 315	$ 601	$ 731	$ 567
Standard Deviation	$ 136	$ 153	$ 555	$ 243
Coefficient of Variation	.432	.255	.759	.429
District Tax Rate				
Mean	2.50 mills	.53 mills	6.12 mills	1.82 mills
Standard Deviation	.77 mills	.20 mills	1.39 mills	.48 mills
Coefficient of Variation	.308	.377	.227	.264
Tution Revenues Per Student				
Mean	$ 242	$ 494	--	$ 329
Standard Deviation	$ 72	$ 70	--	$ 129
Coefficient of Variation	.298	.142	--	.392
District Personal Income Per Student				
Mean	--	$ 642,672	--	$406,164
Standard Deviation	--	$ 425,012	--	$119,687
Coefficient of Variation	--	.661	--	.295

Source: Based on data provided by the states to the Education Finance Center, Education Commission of the States.

statistics for all other variables can be compared across the four states.[4]

Looking at the coefficient of variation for property wealth per student, it is clear that within the states there are wide disparities, to which reference has been made previously. None of the figures is very

[4]Berne has applied these and other measures to elementary/secondary school districts in an attempt to measure inter-district fiscal equity (1978).

close to zero. Average total revenues per student do not vary widely among the four states although it is interesting to note that the states with the largest community college systems, California and Illinois, have average total revenues per student approximately $100 less than those found in Mississippi and New Jersey. The coefficients of variation for total expenditures per student are much lower than those found for property wealth per student; with the exception of Illinois, they are approximately proportional to them. At this level of aggregation, these statistics seem to suggest that the variance in property wealth per student may be related to the variance in total revenues per student, at least in three of the states.

In three of the four states, local district revenues per student were a similar proportion of total revenues per student. In Mississippi, the local contribution was much smaller, both in absolute terms and as a proportion of total revenues, than the other states. The high level of disparity among districts in those states in which state aid was distributed through flat grants is an area of concern when the finance system is assessed using an equal-expenditure or a fiscal-neutrality criteria since the state does not make up any between district revenue differences. The high level of disparity in revenues provided by local districts in states that distribute support through an equalizing mechanism is an indication that the system is working well, if the disparities are of the same magnitude but in an opposite direction to those found in wealth per student. The coefficient of variation does not allow the direction of the disparity to be measured, however.

The disparity in district tax rates indicates that all districts were not making similar efforts to support their community colleges. It is difficult to evaluate this phenomenon in isolation from the other variables, however. The variation in tuition levels among community college districts was, however, of some concern by itself since it raises the possibility of inter-student problems of the type discussed previously. However, the low level of tuition, below $500 in each state, reduces the concern for any inter-district disparities.

Finally, in the two states for which data could be gathered, the disparities in personal income are shown. It is interesting that the absolute levels of income are so different and that the coefficient of variation for income is similar to the coefficient of variation for property wealth. In fact, with community college districts as large as they are, it is less likely that there will be differences between income and property wealth of the magnitude found in elementary/ secondary school districts.

IV. Analysis of Inter-District Equity Problems Associated with Systems of State Aid for Community College Districts in Mississippi, New Jersey, California and Illinois

While the data displayed in Tables 3 and 4 in the previous section indicate that disparities existed among community college districts for each of the variables included, it is not clear what relationships existed among the variables, particularly between district wealth and district behavior in terms of tax rate and tuition decisions. A number of techniques can be used to assess these relationships. The analysis presented in this chapter will initially examine the distribution of wealth and its relationship to the distribution of students and revenues among districts. In addition, the relationships between pairs of variables will be discussed using cross-tabular and correlation analyses. An analysis of tax power disparity will be undertaken in an attempt to quantify how equal districts are in their ability to generate uniform levels of revenues at constant tax rates. Finally, regression analysis will be used to examine the relationship between district wealth and expenditures when expenditure levels are modified to take into account differences in district costs and tuition levels.

If wealth were distributed in proportion to enrollments so that each district had a similar amount of wealth per student from which to generate revenues per student, the proportion of enrollments would be the same as the proportion of wealth for each district. The figures in Tables 5A through 5D can be used in beginning to understand the relationships between wealth, revenues and enrollment. In column (2) of these tables, districts have been ranked from lowest to highest by their total revenues per student. In the columns to the right of column (2), each district's proportion of the state total for particular variables is indicated. For example, district 15 in Mississippi enrolled 3.6 percent of all students in the state, as shown in column (3) in Table 5A. It is expected that as total revenues per student increase, the proportion of state-wide total revenues shown in the column furthest to the right in Tables 5A through 5D, will become greater

than the proportion of enrollments. Where a district's proportion of wealth, in terms of property or income, or its proportion of total revenues exceeds its proportion of statewide enrollment, a (+) has been placed next to the data in Tables 5A through 5D.

Table 5A
1975-76 Proportions of Total Enrollment, Property Wealth and Total Revenues for Community College Districts in Mississippi Ordered by Total Revenues Per FTE Student

(1) District Number	(2) Total Revenues Per FTE Student	(3) Proportion of Statewide FTE Enrollment	(4) Proportion of Statewide Property Wealth	(5) Proportion of Statewide Total Revenues
15	$1,195	.036	.030	.025
3	1,476	.030	.028	.026
6	1,560	.038	.065 (+) [a]	.035
9	1,564	.064	.029	.058
14	1,579	.053	.065 (+)	.048
13	1,621	.081	.081	.077
12	1,685	.065	.027	.064
8	1,705	.073	.061	.072
10	1,706	.052	.099 (+)	.052
1	1,762	.046	.032	.048 (+)
7	1,776	.056	.044	.058 (+)
5	1,809	.152	.129	.159 (+)
2	1,814	.047	.055 (+)	.050 (+)
11	1,887	.144	.114	.155 (+)
4	1,993	.027	.053 (+)	.032 (+)
16	2,074	.036	.088 (+)	.043 (+)

[a] Districts noted by a (+) are those that exceed their proportion of total FTE enrollment for a wealth or revenue measure.

Source: Based on data provided by the states to the Education Finance Center, Education Commission of the States.

The data from Mississippi, in Table 5A, indicate that 6 districts have a greater proportion of statewide property wealth than their proportion of statewide enrollments. As a result, for 9 districts the proportion of wealth is less than their proportion of enrollments. In fact, among the 8 districts with relatively low total revenues per student, only 2 districts have a greater proportion of wealth than students; however, among the 8 districts with relatively high total revenues per student, 14 districts have a greater proportion of wealth than students. Higher revenue levels appear to be associated with disproportionate shares of statewide wealth. Among those 7 districts with a disproportionate share of statewide total revenues, shown in column (5), 4 districts have a less-than-proportionate share of the statewide property wealth, suggesting that they are making a larger than average tax effort or charging a higher-than-average tuition level.

Table 5B

1975-76 Proportions of Total Enrollment, Property Wealth, Income and Total Revenues for Community College Districts in New Jersey Ordered by Total Revenues Per FTE Student

(1) District Number	(2) Total Revenues Per FTE Students	(3) Proportion of Statewide FTE Enrollment	(4) Proportion of Statewide Equalized Property Wealth	(5) Proportion of Statewide Personal Income	(6) Proportion of Statewide Total Revenues
16	$1,376	.088	.091 (+) [a]	.097 (+)	.073
5	1,438	.022	.012	.016	.030
12	1,447	.053	.062 (+)	.039	.046
9	1,555	.109	.097	.091	.102
11	1,572	.087	.080	.069	.083
1	1,603	.047	.025	.024	.046
4	1,631	.076	.056	.060	.075
10	1,652	.094	.045	.073	.094
7	1,673	.031	.025	.021	.031
8	1,722	.076	.041	.046	.079 (+)
3	1,731	.062	.045	.043	.065 (+)
2	1,801	.098	.182 (+)	.172 (+)	.106 (+)
6	1,821	.098	.095	.138 (+)	.108 (+)
13	1,872	.019	.064 (+)	.067 (+)	.022 (+)
15	2,032	.030	.043 (+)	.037 (+)	.036 (+)
14	2,250	.010	.007	.009	.014 (+)

[a] Districts noted by a (+) are those that exceed their proportion of total FTE enrollment for a wealth or revenue measure.

Source: Based on data provided by the states to the Education Finance Center, Education Commission of the States.

In Table 5B similar data for New Jersey are displayed. The data indicate that 5 districts have a greater proportion of property wealth than statewide enrollment. The remaining 11 districts all have disproportionately low wealth in comparison to their proportion of enrollments. Similarly, 5 districts have a greater proportion of income wealth than statewide enrollment. Four districts have disproportionate shares of income and property wealth, of which 3 districts are among the top 5 districts in terms of total revenues per student. While 7 districts have a disproportionate share of statewide total revenues, the differences between the figures in columns (3) and (6) do not suggest that major discrepancies exist.

Similar data for California are presented in Table 5C. Individual districts are not shown in the table but rather the total of groups of districts arranged by deciles of total revenues per student. The figures indicate that the districts in 4 of the 10 deciles, in aggregate, have a disproportionate share of statewide property wealth. Among the 5 deciles containing the districts with relatively low total revenues per student, no deciles have a disproportionate share of wealth, while 4 of the 5 deciles containing districts with relatively high revenues per student have disproportionate shares of wealth.

Table 5C
1975-76 Proportions of Total Enrollment, Property Wealth and Total Revenues for Community College Districts in California Ordered by Deciles of Total Revenues Per Student in ADA

(1) Decile of Total Revenues Per Student in ADA	(2) Average Total Revenues Per Student in ADA	(3) Proportion of Statewide Enrollment	(4) Proportion of Statewide Equalized Property Wealth	(5) Proportion of Statewide Total Revenues
1	$1,152	.080	.058	.063
2	1,258	.113	.090	.096
3	1,304	.090	.083	.079
4	1,351	.138	.120	.126
5	1,435	.156	.126	.152
6	1,502	.119	.130 (+) [a]	.121 (+)
7	1,575	.071	.067	.076 (+)
8	1,750	.151	.214 (+)	.172 (+)
9	1,934	.054	.065 (+)	.071 (+)
10	2,700	.028	.047 (+)	.043 (+)

[a] Districts noted by a (+) are those that exceed their proportion of total FTE enrollment for a wealth or revenue measure.

Source: Based on data provided by the states to the Education Finance Center, Education Commission of the States.

Data for 37 community college districts in Illinois are shown in Table 5D. If the districts are divided into three groups, 12 districts having low revenues per student, 12 districts having medium revenues per

Table 5D
1975-76 Proportions of Total Enrollment, Property Wealth, Income and Total Revenues for Community College Districts in Illinois Ordered by Total Revenues Per FTE Student

(1) District Number	(2) Total Revenues Per FTE Students	(3) Proportion of Statewide FTE Enrollment	(4) Proportion of Statewide Equalized Property Wealth	(5) Proportion of Statewide Personal Income	(6) Proportion of Statewide Total Revenues
8	$ 893	.305	.250	.330 (+) [a]	.201
31	1,160	.010	.003	.004	.009
29	1,167	.025	.009	.008	.021
22	1,359	.029	.027	.029	.029
33	1,368	.005	.004	.004	.005
25	1,373	.033	.041 (+)	.024	.034 (+)
21	1,398	.008	.005	.006	.008
15	1,399	.018	.017	.019 (+)	.019 (+)
16	1,421	.015	.019 (+)	.017 (+)	.016 (+)
2	1,458	.052	.072 (+)	.067 (+)	.056 (+)
17	1,471	.016	.017 (+)	.014	.017 (+)
13	1,476	.013	.018 (+)	.012	.015 (+)
3	1,476	.031	.023	.022	.034 (+)
23	1,488	.010	.008	.006	.011 (+)
4	1,489	.051	.041	.028	.056 (+)
6	1,492	.012	.011	.010	.014 (+)
10	1,494	.028	.021	.031 (+)	.031 (+)
11	1,531	.022	.032 (+)	.026 (+)	.025 (+)
36	1,556	.017	.018 (+)	.018 (+)	.020 (+)
1	1,558	.009	.008	.008	.010 (+)
32	1,558	.027	.027	.031 (+)	.031 (+)
24	1,562	.032	.033 (+)	.034 (+)	.037 (+)
12	1,573	.042	.044 (+)	.035	.049 (+)

18	1,630	.009	.013 (+)	.011 (+)	.011 (+)
7	1,635	.013	.010	.011	.015 (+)
28	1,672	.008	.012 (+)	.010 (+)	.010 (+)
20	1,679	.012	.012	.010	.014 (+)
30	1,698	.010	.007	.008	.012 (+)
14	1,733	.033	.043 (+)	.036 (+)	.042 (+)
19	1,761	.007	.008 (+)	.008 (+)	.010 (+)
9	1,782	.015	.018 (+)	.019 (+)	.020 (+)
5	1,807	.022	.029 (+)	.020	.029 (+)
26	1,854	.017	.029 (+)	.027 (+)	.024 (+)
27	1,880	.010	.013 (+)	.014 (+)	.014 (+)
34	2,053	.005	.007 (+)	.005	.007 (+)
37	2,188	.007	.015 (+)	.012 (+)	.011 (+)
35	2,302	.022	.033 (+)	.027 (+)	.036 (+)

[a] Districts noted by a (+) are those that exceed their proportion of total FTE enrollment for a wealth or revenue measure.

Source: Based on data provided by the states to the Education Finance Center, Education Commission of the States.

student and 13 districts having the highest revenues per student, the data in column (4) indicate that 5 of the first 12 districts, 5 of the next 12 districts and 10 of the last 13 districts have disproportionate shares of property wealth. Thus, once a relatively high level of revenues per student is reached, it appears that a strong relationship between revenues and property wealth exist. The relationship between income and revenues is similar although it becomes progressively more likely that a district will have disproportionate income as its revenues per student increase. The strongest relationship between revenue per student and wealth exists when property wealth and income are combined. Among the 12 districts with the lowest revenues per student, 2 had disproportionate shares of property and income wealth; among the 12 districts with medium revenues per student, 4 districts had disproportionate shares of property and income wealth; among the 13 districts with the highest revenues per student, 8 districts had disproportionate shares of property and income wealth. It is interesting to note that all but 6 districts have disproportionately high shares of statewide total revenues. It would appear that any problem related to the distribution of revenues among the community college districts in Illinois is caused primarily by district number 8, which received slightly over 20 percent of all community college revenues in the state but enrolled over 30 percent of all students.

There are a number of additional ways to examine the relationship between community college district wealth and per student revenue levels. In Tables 6A and 6B, the districts in California and Illinois have been assigned to categories of property wealth per student and total revenues per student. In California, as shown in Table 6A, of the 14 districts with less than $75,000 of equalized assessed property wealth per student, 7 districts had total revenues of less than $1,300 per student. Of the remaining 7 districts, all had total revenues per student between $1,300 and $1,600. For districts with between $75,000 and $100,000 of property wealth per student, 15 districts had total revenues less than $1,400 per student, while 12 had total revenues greater than $1,400 per student. A similarly even distribution in total revenues per student occurred for districts having between $100,000 and $125,000 of property wealth. Among the 20 districts with greater than $125,000 of property wealth, however, 16 had revenues per pupil in excess of $1,600. Thus, for districts with relatively low property wealth, there was a high probability of having relatively low revenues; for districts with relatively high property wealth, there was a high probability of having relatively high revenues. In fact, as shown in the Appendix the correlation coefficient between property wealth per student and total revenues per student was .86.

In Illinois there was also a positive relationship between property

Table 6A
Cross-Tabulation of Community College Districts in California by Intervals of Total Revenues Per Student and Equalized Assessed Property Wealth Per Student for 1975-76

Property Per Student	Revenues Per Student: Less Than $1,300	$1,301-$1,400	$1,401-$1,500	$1,501-$1,600	Greater Than $1,600	Total
Less Than $ 75,000	7	2	4	1	0	14
$ 75,001-$100,000	9	6	3	6	3	27
$100,001-$125,000	1	3	1	1	3	9
Greater Than $125,000	0	1	0	3	16	20
Total	17	12	8	11	22	70

Table 6B
Cross-Tabulation of Community College Districts in Illinois by Intervals of Total Revenues Per Student and Equalized Assessed Property Wealth Per Student for 1975-76

Property Per Student	Revenues Per Student: Less Than $1,200	$1,201-$1,400	$1,401-$1,600	$1,601-$1,800	Greater Than $1,800	Total
Less Than $200,000	2	1	--	1	--	4
$200,001-$300,000	1	3	7	2	--	13
$300,001-$400,000	--	1	6	3	2	12
Greater Than $400,000	--	--	2	2	4	8
Total	3	5	15	8	6	37

wealth and total revenues per student when analyzed in this way. Of the 4 districts with less than $200,000 of property wealth per student, 2 districts had total revenues less than $1,200 per student; and 2 districts had total revenues between $1,200 and $1,800 per student. Of the 25 districts with property wealth per student between $200,000 and $400,000, more than half the districts had total revenues between $1,400 and $1,600 per student, while 5 districts had per student revenues below that range and 7 districts had per student revenues above that range. Of the 8 districts with property wealth greater than

$400,000, all districts had per student revenues greater than $1,400; and half of the districts had per student revenues in excess of $1,800. The strength of this tendency is indicated by a correlation coefficient of .71 between property wealth per student as shown in the Appendix. The relationship between these variables was positive but not as strong in Mississippi and New Jersey where the correlation coefficients between wealth and total revenues were .45 and .25 respectively.

Table 7A
Cross-Tabulation of Community College Districts in California by Local District Tax Rate and Equalized Assessed Property Wealth Per Student for 1975-76

	Tax Rate					
Property Per Students	Less Than 5.25 Mills	5.26-5.75 Mills	5.76-6.25 Mills	6.26-6.75 Mills	Greater Than 6.75 Mills	Total
Less Than $ 75,000	8	2	1	0	3	14
$ 75,001-$100,000	6	4	4	7	6	27
$100,001-$125,000	3	1	3	0	2	9
Greater Than $125,000	3	3	5	2	7	20
Total	20	10	13	9	18	70

Table 7B
Cross-Tabulation of Community College Districts in Illinois by Local District Tax Rate and Equalized Assessed Property Wealth Per Student for 1975-76

	Tax Rate				
Property Per Students	Less Than 1.50 Mills	1.51-2.00 Mills	2.01-2.50 Mills	Greater Than 2.50 Mills	Total
Less Than $200,000	--	--	3	1	4
$200,001-$300,000	6	3	3	1	13
$300,001-$400,000	4	4	4	--	12
Greater Than $400,000	3	3	2	--	8
Total	13	10	12	2	37

If property wealth is related to total revenues for community college districts, it is possible that local district tax rates are related to property wealth. This relationship has been examined for California and Illinois in Tables 7A and 7B respectively. It would generally be expected that wealthier districts would be making lower tax efforts than their less wealthy peers, assuming that all districts desired to raise the same amounts of revenues per student. If wealthier districts also had a preference for spending more, the expected negative relationship might not be found or it might be weak. Further, if state aid is distributed in a way that makes the system fiscally neutral, the expected negative relationship might not be found; in fact, a positive relationship, tax rates increasing with total revenues per student, might be expected. In California there appears to be little relationship between district property wealth and tax rates, with a fairly even distribution of district tax rates across each of the indicated levels of district wealth. For the 14 districts with the lowest property wealth, a majority of the districts levied the lowest tax rates in 1975-76. However, for the other 56 districts, no patterns are readily discernible. This is confirmed by the low correlation coefficient between property wealth and tax rate, −.05, as shown in the Appendix. In Illinois the pattern is somewhat clearer. Of the 4 districts with the lowest levels of property wealth per student, all had high tax rates. Oppositely, 6 of the 8 districts with the highest levels of property wealth per student had tax rates that were relatively low. In general, however, a majority of districts had relatively low taxes, with the result that the correlation coefficient between district wealth and district tax rates was −.17, as shown in the Appendix. Similar correlation coefficients for Mississippi and New Jersey community college districts were −.51 and −.70, respectively, as shown in the Appendix.

The interactions between property wealth, total revenues and tax rates are complicated for community colleges by variations in tuition levels across districts. In Table 8, the relationship between property wealth and tuition levels are examined for the community college districts of Illinois. It is expected that if all districts desired to spend approximately the same amount per student but had different property tax bases that were not completely equalized in the distribution of state aid, higher tuition levels would be found to exist in less wealthy districts, given that tax rates were similar across districts. Given variations in total revenues per student and tax rates, however, it is not surprising to find different results in Illinois. All of the districts that had less than $200,000 in property wealth per student received less than $200 per student in tuition revenues, while all of the eight districts with greater than $400,000 in property wealth per student received more than $200 per student in tuition revenues. In fact, the correlation coefficient between property wealth per student and tuition revenues per student was .43, as indicated in the

Table 8
Cross-Tabulation of Community College Districts in Illinois by Tuition/Fee Revenues Per FTE Student and Equalized Assessed Property Wealth Per Student for 1975-76

	Tuition/Fees Per Student						
Property Per Student	Less Than $100	$101-$200-	$201-$300	$301-$400	$401-$500	Greater Than $500	Total
Less Than $200,000	1	3	--	--	--	--	4
$200,001-$300,000	2	1	--	6	3	1	13
$300,001-$400,000	--	--	2	7	3	--	12
Greater Than $400,000	--	--	2	2	2	2	8
Total	3	4	4	15	8	3	37

Appendix. A similarly positive and relatively strong correlation coefficient of .32 was found for community college districts in New Jersey, as shown in the Appendix. In Mississippi, however, a relatively strong negative correlation coefficient of −.44 was found, as shown in the Appendix.

As mentioned previously, it is of interest to determine what the relationship is between the income of districts and their total revenues. For elementary/secondary school districts, it has been found that income and property wealth are distributed differently among districts. It is expected that such differences are likely to be reduced for community college districts due to their larger size. Community college districts in Illinois have been categorized by levels of income wealth per student and total revenues per student in Table 9. As can be seen in that table, a positive relationship exists between income and total revenues, with districts possessing higher wealth having been more likely to have higher total revenues. Of the seven districts with less than $300,000 of income per student, four districts had total revenues per student of less than $1,400. Of the eight districts that had more than $500,000 of income, seven districts had total revenues greater than $1,600 per student. The strength of this relationship is indicated by a correlation coefficient of .62, as shown in the Appendix. The correlation coefficient for a similar relationship in New Jersey was .32, as shown in the Appendix. In both cases, the relationship between property wealth and total revenues and between income and total revenues are of similar strength.

In Table 10, the relationship between income and property wealth is

Table 9
Cross-Tabulation of Community College Districts in Illinois by Intervals of Total Revenues Per Student and Income Wealth Per Student for 1975-76

	Revenues Per Student					
Income Per Student	Less Than $1,200	$1,201-$1,400	$1,401-$1,600	$1,601-$1,800	Greater Than $1,800	Total
Less Than $300,000	2	2	3	--	--	7
$300,001-$400,000	--	1	5	3	1	10
$400,001-$500,000	1	2	6	2	1	12
Greater Than $500,000	--	--	1	3	4	8
Total	3	5	15	8	6	37

Table 10
Cross-Tabulation of Community College Districts in Illinois by Intervals of Income Wealth Per Student and Equalized Assessed Property Wealth Per Student for 1975-76

	Income Per Student				
Property Per Student	Less Than $300,000	$300,001-$400,000	$400,001-$500,000	Greater Than $500,000	Total
Less Than $200,000	3	1	--	--	4
$200,001-$300,000	3	4	6	--	13
$300,001-$400,000	1	5	4	2	12
Greater Than $400,000	--	--	2	6	8
Total	7	10	12	8	37

shown for community college districts in Illinois, categorized by the previously used levels of each variable. It is apparent that there is a positive relationship between the two measures of wealth. As shown, 25 districts have property wealth between $200,000 and $400,000 per student. Similarly, 22 districts have income wealth between $300,000 and $500,000 per student. Nineteen districts meet both criteria. Of those districts outside these ranges, all districts either have less than $300,000 of income wealth per student and less than $200,000 of property wealth per student or more than $500,000 of

income per student and more than $400,000 in property wealth per student. The strength of this relationship is indicated by a correlation coefficient of .84 between income wealth per student and property wealth per student.

In Table 11, districts have been categorized by levels of property wealth, income wealth and total revenues per student. Looking only at districts with revenue levels outside of the $1,400 to $1,600 range, it is clear that property wealth is a better indicator of revenue than income wealth. Of districts with less than $300,000 per student in property value, 7 of 10 districts received revenues of less than $1,400 per student while 11 of 12 districts with over $300,000 per student in property value received revenues in excess of $1,600 per student. Of the 9 districts with less than $400,000 in income wealth per student, 5 received less than $1,400 in revenues per student while of the 13 districts with over $400,000 in income wealth per student, 10 districts receive greater than $1,600 per student in total revenues.

It has been shown earlier that variations in expenditure per FTE student existed among the states. While expenditures may not be equal across community college districts, the state aid system may promote inter-district fiscal neutrality, a condition under which expenditures are related to tax rates such that districts raise equal amounts of revenues per students per unit of tax efforts. In Tables 12A through 12D, the revenue generated per mill of local tax effort, tax power, is displayed for several different combinations of revenue sources. The community college districts in each state have been ranked by property wealth per student. Since the amount that can be generated from the local tax base per mill of tax effort is a function of the magnitude of the tax base, the figures shown in column (2) of the four tables increase monotonically and reflect the relative inter-district disparities in property wealth that have been discussed previously. The coefficient of variation for these numbers is one indication of the variation among districts in their ability to raise revenues. If no other funds were distributed, the coefficient of variation would indicate how much variation would likely be found in total revenues, tax rates or tuition levels, depending upon the spending preferences of the districts.

For community college districts in Mississippi, the data in column (3) of Table 12A show that the addition of state formula-based aid reduces the disparity among districts in the amount of revenues generated per mill of tax effort by increasing mean total revenues raised per mill of tax effort to a greater extent than the increase in the standard deviation of these figures. Since these funds were essentially distributed as a flat grant, the reduction in the coefficient of variation indicates that using such a system results in increases in

Table 11
Cross-Tabulation of Community College Districts in Illinois by Equalized Assessed Property Wealth Per FTE Student, Income Wealth Per Student and Total Revenues Per FTE Student for 1975-76

Revenues Per Student	Property Per Student: Less Than $300,000 — Income Less Than $400,000	Property Per Student: Less Than $300,000 — Income Greater Than $400,000	Property Per Student: Greater Than $300,000 — Income Less Than $400,000	Property Per Student: Greater Than $300,000 — Income Greater Than $400,000	Total
Less Than $1,400	4	3	1	–	8
$1,400-$1,600	5	2	3	5	15
Greater Than $1,600	2	1	2	9	14
Total	11	6	6	14	37

Table 12A

1975-76 Dollars Generated Per FTE Student Per Mill of Local Community College District Tax Effort for Different Sources of Revenue in Mississippi With Districts Ordered by Property Wealth Per Student

(1) District Number	(2) Local District Revenues	(3) Local District and State Formula Revenues	(4) Local District and All State Revenues	(5) All Revenues
12	$ 50	$273	$ 360	$ 465
9	54	335	436	532
1	85	548	617	990
7	95	282	358	476
11	97	288	371	483
15	100	447	561	613
8	101	403	480	596
5	104	401	577	815
3	113	411	474	579
13	121	509	605	836
2	141	368	442	593
14	149	464	625	802
6	205	669	790	940
10	231	852	1,157	1,434
4	235	474	592	859
16	299	578	653	926
Mean	$136	$438	$ 569	$ 746
Standard Deviation	$ 68	$178	$ 192	$ 249
Coefficient of Variation	.500	.406	.337	.334

Source: Based on data provided by the states to the Education Finance Center, Education Commission of the States.

revenues while reducing revenue disparities among districts. Data in column (4) show that the addition of other state aid, distributed for categorical purposes, further reduces the disparity in tax power among districts. The addition of tuition revenues and federal revenues continues this trend by reducing the coefficient of variation even further. This is expected since tuition revenues per student are negatively correlated with property wealth per student, as indicated previously. It should be noted that a wide disparity, almost $1,000, does exist between the districts with the lowest and highest abilities to generate revenues per mill of tax effort. Further, after all revenues are considered, the coefficient of variation is still relatively high.

Similar figures for New Jersey are presented in Table 12B. As shown in column (2), the coefficient of variation for local revenues per mill was .633. State aid, distributed through flat grants, reduces the disparity in dollars generated per mill of tax effort to .524 by increas-

Table 12B

1975-76 Dollars Generated Per FTE Student Per Mill of Local Community College District Tax Effort for Different Sources of Revenue in New Jersey With Districts Ordered by Property Wealth Per Student

(1) District Number	(2) Local District Revenues	(3) Local District and State Revenues	(4) Total Revenues Excluding Tuition	(5) Total Revenues Including Tuition
1	$ 683	$1,297	$1,342	$2,082
8	688	1,299	1,378	1,957
5	700	1,405	1,469	2,247
14	855	1,696	2,509	3,169
3	942	1,608	1,847	2,623
4	942	1,523	1,915	2,509
10	1,034	1,792	1,964	2,581
7	1,059	1,802	1,861	2,535
9	1,160	2,151	2,444	2,430
11	1,171	3,250	4,083	6,550
6	1,252	2,107	2,215	2,985
16	1,325	2,839	3,339	4,914
12	1,522	2,664	2,786	4,019
15	1,862	2,823	2,938	4,323
2	2,377	4,335	4,969	6,927
13	4,260	6,245	6,550	9,360
Mean	$1,365	$2,427	$2,726	$3,826
Standard Deviation	$ 864	$1,271	$1,378	$2,056
Coefficient of Variation	.633	.524	.506	.537

Source: Based on data provided by the states to the Education Finance Center, Education Commission of the States.

ing the district mean by 80 percent while increasing the standard deviation by 50 percent. The coefficient of variation is further reduced when other revenues, excluding tuition, are considered; when tuition revenues are included, the disparity increases. In fact, the lowest coefficient of variation in this analysis exceeds the level in Mississippi when only local revenues were considered.

Data concerning tax power for deciles of California community college districts is presented in Table 12C. While the disparity for local district revenues alone is very high, as indicated in column (2), the addition of state equalization aid, distributed through a foundation program, significantly reduces the coefficient of variation. In order to accomplish this, the mean dollars generated per mill increase while the standard deviation for all districts actually decreases. It should be noted that, on the average, only the districts in the highest decile of property wealth per student appear to be significantly different from the other districts. The distribution of other state aids further

Table 12C
1975-76 Dollars Generated Per Student in ADA Per Mill of Local Community College District Tax Effort for Different Sources of Revenue in California With Districts Ordered in Deciles of Property Wealth Per Student

(1) Decile of Property Wealth Per Student in ADA, Low to High	(2) Local District Revenues	(3) Local District and State Equalizing Revenues	(4) Local District and All State Revenues	(5) All Revenues
1	$ 57 (.175) [a]	$213 (.223)	$224 (.218)	$271 (.210)
2	72 (.039)	195 (.120)	206 (.106)	239 (.132)
3	79 (.033)	184 (.124)	196 (.128)	225 (.112)
4	85 (.016)	180 (.096)	190 (.103)	220 (.110)
5	90 (.022)	191 (.069)	204 (.069)	250 (.076)
6	96 (.040)	204 (.204)	221 (.196)	264 (.254)
7	118 (.057)	198 (.097)	213 (.101)	239 (.086)
8	128 (.020)	216 (.214)	233 (.196)	275 (.219)
9	146 (.073)	200 (.070)	217 (.062)	271 (.247)
10	335 (.810)	368 (.730)	390 (.680)	444 (.629)
Mean (All districts)	$121	$215	$229	$270
Standard Deviation (All districts)	$111	$ 99	$100	$110
Coefficient of Variation (All districts)	.919	.459	.435	.410

[a] Figures in parentheses are coefficients of variation for district data within the decile.

Source: Based on data provided by the states to the Education Finance Center, Education Commission of the States.

reduces inter-district disparities, as do the revenues from all other sources, although the districts in the highest decile of property wealth per student continue to differ, on the average, from all other districts. While the distribution of state aid reduces the disparity among districts by 50 percent, a high level of disparity exists among all districts in terms of their ability to generate equal revenues per student at equal levels of tax effort.

Data for Illinois are presented in Table 12D. The disparity among the state's community college districts, considering their own revenue-generating capacities, is relatively small compared to the states previously examined. The addition of state flat-grant revenue reduces the coefficient of variation of tax power to .239 from .344 for local revenues alone. When state equalization aid is considered, the coefficient of variation is further reduced to .216 by increasing the average dollars generated per unit of effort to a small extent, while decreasing the standard deviation among districts. While the addition of other sources of state revenue, including support for public

Table 12D

1975-76 Dollars Generated Per FTE Student Per Mill of Local Community College District Tax Effort for Different Sources of Revenue in Illinois with Districts Ordered by Property Wealth Per Student

(1)	(2)	(3)	(4)	(5)	(6)
District Number	Local District Revenues	Local District and State Flat Grant Revenues	Local District, State Flat Grant and State Equalization-Aid Revenues	Local District and All State Revenues	All Revenues
31	$ 92	$347	$394	$ 488	$ 669
29	108	319	394	453	473
21	190	409	448	523	572
30	200	401	446	491	677
33	211	431	446	509	566
3	216	585	664	831	1,056
10	223	580	612	822	1,053
7	230	468	500	596	747
4	231	600	631	745	1,059
8	236	567	567	657	694
23	248	552	563	700	860
6	267	618	618	775	999
15	270	780	796	1,022	1,369
22	270	630	659	771	936
1	279	487	512	564	625
32	287	560	560	634	830
19	294	484	493	570	663
24	301	539	544	608	729
36	301	549	549	648	746
20	305	585	585	723	918
12	305	662	662	748	1,090
17	307	714	714	864	1,126
9	345	558	558	622	742
25	352	805	805	911	1,211
16	360	755	755	865	1,091
14	373	645	645	719	917
5	378	666	666	768	1,008
13	388	673	673	723	822
27	391	607	607	667	800
2	401	879	879	1,017	1,362
11	412	885	885	1,071	1,420
18	427	781	781	909	1,086
35	442	671	671	715	1,043
28	460	882	882	1,052	1,363
34	468	683	683	754	838
26	479	750	750	845	980
37	651	911	911	998	1,134
Mean	$316	$622	$635	$ 740	$ 923
Standard Deviation	$109	$149	$137	$ 165	$ 244
Coefficient of Variation	.345	.240	.216	.223	.264

Source: Based on data provided by the states to the Education Finance Center, Education Commission of the States.

service activities and disadvantaged students, increases the average tax power to $740, the standard deviation among districts increases to over $164, raising the coefficient of variation to .222. When all sources of revenue are considered, including federal aid and tuition, the coefficient of variation further increases to .264, surpassing the level achieved when only state flat grants and local revenues are considered. Thus, state equalization aid does promote some equalization, while the distribution of state aid other than flat grant and equalization support and the distribution of other revenues have disequalizing effects. When state flat-grant revenues are combined with local revenues, the standard deviation of the dollars generated per mill rises by nearly 40 percent; at the same time, the mean figure for all districts rises by almost 200 percent.

It is clear from this analysis that community college districts vary substantially within states in terms of their abilities to generate equal revenues at equal tax rates, although the variations between states are large. The distribution of state flat-grant support to districts reduces inter-district disparities as does the distribution of state aid allocated through foundation programs. While it is difficult to determine which programs have the greater equalization effect, it is clear that none of the programs completely eliminates inter-district disparities. Tuition revenues tend to exacerbate these disparities, except in the case where tuition levels are negatively correlated with district property wealth per student. Thus, fiscal neutrality, as measured by tax power, is not being achieved under current levels and methods of distributing state support.

All correlation coefficients previously discussed in this section are shown in the Appendix. In addition, a number of correlation coefficients to which no references have been made are included in the table. The correlation coefficients between property wealth per capita and total revenues per student are weaker than those between property wealth per student and total revenues per student. In fact, for Mississippi and New Jersey, the signs of these coefficients are reversed. It is possible that a negative relationship between property wealth per capita and revenues per student is indicative of the fact that different proportions of a district's population may participate in local community college activities. It is likely that the wealthier a community, the higher the probability that students enroll in an institution other than the community college, with the result that local support is weakened.

The correlation coefficients between income per student and district tax rate are smaller than but in the same direction as those between property wealth per student and tax rate for New Jersey and Illinois. Similarly, the correlation coefficients between income per student

and tuition revenues per student are smaller than but in the same direction as those between property wealth per student and tuition revenues per student.

Inter-District Expenditure Variations Caused by Cost or Tuition Variations: The Case in Illinois

Up to this point, the relationship between community college district wealth and actual district revenues/expenditures has been examined; and both disparities and inequities have been noted in four states. As mentioned previously, however, there are several reasons why district average expenditures might vary. In order to examine the degree to which actual expenditures differ from expected expenditure levels, a program adjusted expenditure figure for the districts in Illinois has been determined. This figure has been calculated on the basis of the district's actual proportion of enrollment in eight different academic programs and the statewide average expenditures per student for those programs. Illinois is the only one of the four states in which such data are available.

Actual expenditures per student are shown in column (2) of Table 13, and program adjusted expenditures are displayed in column (3) of the same table. The program adjusted expenditure figure is a crude indicator of the permissible expenditure figure that would result if districts spent a sufficient amount to provide programs of average quality while enrollments remained constant. This indicator does not take into consideration the inter-district expenditure variances that might be caused by cost-of-education differences. In 1975-76, program adjusted, or permissible, expenditure levels varied between $1,506 per student and $1,671 per student, a differential in excess of 10 percent, but not nearly as high as the variation in unadjusted expenditures. In column (4) the difference between actual and program adjusted expenditure figures is shown. In absolute terms, the actual expenditures of districts differed from permissible levels by between $9 and $861. The majority of districts were actually spending at levels below the permissible level.

An interesting question that can be asked about these differences is the extent to which they are related to district wealth. In column (6), the difference between actual equalized assessed property wealth per student and the statewide average property wealth per student is shown. The relationship between a district's variance from permissible expenditure levels and its variance from average property wealth can be investigated by comparing the figures in column (4) with those in column (6). In 27 of the 37 districts, the sign of the variances are the same. The relationship between the magnitude of the variances is indicated by a correlation coefficient of .73 between them. The simple

Table 13

1975-76 Disparities for Program Adjusted Expenditures, Tuition Adjusted Expenditures and Mean Property Wealth for Community College Districts in Illinois With Districts Ordered by Actual Expenditures Per Student

(1) District Number	(2) Actual Expenditures	(3) Program Adjusted Expenditures [a]	(4) Difference Between Actual Adjusted Expenditures and Program Adjusted Expenditures	(5) Difference Between Tuition Adjusted Expenditures and Program Adjusted Expenditures [b]	(6) Difference Between Actual Equalized and Mean Equalized Property Wealth [c]
8	$ 914	$1,506	$-592	$-343	$ -79,897
31	1,118	1,572	-436	-212	-224,101
29	1,154	1,568	-414	-107	-207,976
22	1,343	1,567	-224	-223	-45,664
25	1,383	1,564	-181	-148	+36,380
10	1,396	1,567	-171	-385	-93,236
15	1,397	1,610	-213	-368	-46,424
32	1,433	1,575	-142	-145	-28,760
6	1,445	1,613	-169	-262	-49,587
24	1,447	1,531	-84	-84	-15,543
30	1,450	1,560	-110	+52	-117,412
21	1,458	1,659	-201	-19	-126,575
18	1,468	1,607	-128	-98	+111,173
11	1,493	1,562	-68	-247	+95,621
17	1,495	1,595	-100	-129	-9,584
13	1,498	1,598	-100	+19	+71,886
23	1,504	1,593	-86	-103	-68,374
3	1,524	1,570	-46	-115	-100,235
36	1,526	1,563	-37	-24	-14,666
20	1,536	1,578	-42	-73	-11,434
16	1,552	1,572	-20	+8	+44,108

33	1,574	1,637	+63	+169	−105,570
2	1,578	1,535	+43	−65	+84,977
1	1,584	1,671	−87	+59	−37,518
14	1,595	1,570	+24	−47	+57,113
4	1,601	1,592	+9	−94	−84,679
12	1,613	1,566	+47	−115	−11,187
7	1,736	1,560	+176	+126	−86,060
9	1,759	1,581	+178	+151	+29,210
19	1,766	1,574	+193	+192	−22,078
28	1,766	1,569	+196	+17	+144,283
5	1,782	1,604	+178	+31	+61,439
26	1,883	1,560	+324	+295	+162,988
27	2,116	1,570	+546	+556	+75,269
37	2,254	1,531	+732	+683	+334,613
35	2,287	1,541	+746	+612	+125,899
34	2,475	1,614	+861	+954	+151,590

[a] A district's program adjusted expenditure figure is calculated by multiplying the proportion of students in each of eight standard programs by the statewide average cost of those programs.

[b] A district's tuition adjusted expenditure figure is calculated by adding the difference between a statewide average tuition figure and a district's actual tuition figure to the district's actual expenditures.

[c] Mean equalized property wealth is calculated using community college districts as the units of analysis.

Source: Based on data provided by the states to the Education Finance Center, Education Commission of the States.

linear regression equation for predicting the variance in expenditure levels from the variance in wealth is as follows:

(Actual — program adjusted expenditures per student) = 14.005 + 2.042 ([actual — mean property wealth per student] ÷ 1,000).

This equation indicates that for every $1,000 of difference between a community college district's actual property wealth and the statewide average property wealth per student, there was a $2.04 expected difference between the district's actual expenditures per student and its program adjusted expenditures per student. With a range of $200,000 in property wealth per student as a conservative indicator of the wealth disparity among community college districts, a $408 difference between actual and program adjusted expenditures was likely to be found. Thus, even taking into consideration allowable expenditure variations, district wealth and district expenditures were strongly related to each other.

It has also been mentioned previously that adjustments need to be made to district revenue/expenditures to account for inter-district variations in tuition/fee levels. One way to do this is by assuming that all districts could charge students at the mean tuition/fee level, with all districts charging below that level viewed as setting a lower-than-normal price and all those charging above that level viewed as setting an inordinately high price. This assumption does not take into consideration the average ability of students to pay tuition, which might be indicated by the relative median family income of their district, for instance. If districts set an average tuition/fee level, it is assumed that their expenditures would change to the extent that their tuition/fee level was above or below the mean level. Column (5) in Table 13 displays, for each district, the expenditure differences between what districts would have spent if their tuition/fee levels had been at the average level and their program adjusted expenditures per student. The relationship between these differences and districts' discrepancies from average property wealth per student is strong, with a correlation coefficient of .58, and can be summarized by the following linear regression equation:

(Tuition adjusted — program adjusted expenditures) = 13.987 + 1.536 ([actual — mean property wealth per student] ÷ 1,000).

For every $1,000 of variation in district property wealth from mean statewide property wealth per student there is an expectation of $1.54 difference between the actual expenditure level, adjusted for the district's variance from the average statewide tuition level, and the program adjusted expenditure level. The fact that the inclusion of a tuition adjustment factor reduces the magnitude of the relationship between district expenditures and district wealth suggests that dis-

tricts spending at a level below the level needed to provide average programs also tend to charge less than the average tuition/fee level, while districts spending at a level above the level needed to provide average programs also tend to set tuition/fee at a level higher than the statewide average. Thus, the relationship between expenditures and wealth for community college districts is complicated by relationships between tuition and expenditures as well as tuition and wealth.

Conclusion

This booklet has examined some of the problems associated with state support for community colleges, particularly when local community college districts are responsible for providing a portion of total institutional revenue. A discussion of intergovernmental fiscal relations has been presented. Essentially, three problems have been mentioned that relate to the equity and efficiency of how state aid is distributed in support of community colleges: (1) the integration of direct state support for community colleges into the system of state support for other public education facilities, including elementary/secondary and postsecondary institutions; (2) the consideration of local district wealth in the distribution of state aid to community colleges; and (3) tuition, including its relationship to the other problems and its impact on students. In discussing these problems, a number of technical considerations have been raised, such as how to measure district wealth and the designation of an appropriate task unit for funding purposes. Each of these problems and technical considerations needs to be investigated further if a state support system is to be properly designed. Current systems of state support for community colleges were briefly described.

The latter portion of the booklet was devoted to an examination of the community college finance systems in Mississippi, New Jersey, California and Illinois. The examination concentrated on the second problem cited above, the inter-district equity situation. It has been shown that district wealth varied substantially between community college districts and that variations in total revenues, while smaller than those for wealth, were related, in some cases strongly, to variations in wealth. Tuition levels were also shown to be related to wealth although the direction of the relationship was not uniform among the states examined. The ability to generate equal revenues at equal tax rates was shown to vary widely among districts and the distribution of state general aid was shown to reduce disparities in tax power although not necessarily to a very low level. State categorical aid and federal aid had a mixed influence on reducing inter-district tax power variations. State revenues provided specifically to promote equalization had a relatively small effect in some states due to their being relatively small proportion of all state revenues. Tuition revenues in some cases increased inter-district revenue disparities. Problems related to tuition and permissible variables in expenditures among

community college districts were shown to complicate the study of fiscal equity. One of several questions that requires additional research is how districts would respond to changes in state support systems designed to *ex ante* eliminate the differences in wealth; would expenditures, tax rates or tuition levels be modified, and what effect might such modifications have on student behavior?

There are, of course, additional policy issues directly related to financing that have not been discussed in depth in this paper. One is the problem of integrating state aid to community colleges with federal support available both to institutions and, to a greater extent, to students. A second issue is whether local support of community colleges should supplement state support or be considered part of a total "public" support of community colleges. There is also the question of how to determine an appropriate level of the student contribution. Finally, there are numerous issues related to taxation, including the impact of taxes on state residents and the ability of the tax structure to support future expenditure levels. These issues will become more important in the future if the problems faced by the postsecondary education system and the constraints on local and state governments such as tax or budget growth limits, continue to escalate.

Appendix

Correlation Coefficient Between Certain Pairs of Finance Variables for Community College Districts in Mississippi, New Jersey, California and Illinois Using 1975-76 Data

Variables Correlated	Correlation Coefficients			
	Mississippi	New Jersey	California	Illinois
Property Wealth Per Student and Total Revenues Per Student	+.45	+.25	+.86	+.71
Property Wealth Per Student and Tax Rate	−.51	−.70	−.05	−.17
Property Wealth Per Student and Tuition Revenues Per Student	−.44	+.32	-- [a]	+.43
Property Wealth Per Capita and Total Revenues Per Student	−.36	−.12	--	+.22
Income Per Student and Total Revenues Per Student	--	+.32	--	+.62
Income Per Student and Tax Rate	--	−.60	--	−.07
Income Per Student and Tuition Revenues Per Student	--	+.28	--	+.39

[a] -- indicates that data are not available to compute the coefficient.

Source: Based on data provided by the states to the Education Finance Center, Education Commission of the States.

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